



## The complex relationship between interrogation techniques, suspects changing their statement and legal assistance. Evidence from a Dutch sample of police interviews

Willem-Jan Verhoeven

To cite this article: Willem-Jan Verhoeven (2018) The complex relationship between interrogation techniques, suspects changing their statement and legal assistance. Evidence from a Dutch sample of police interviews, *Policing and Society*, 28:3, 308-327, DOI: [10.1080/10439463.2016.1157594](https://doi.org/10.1080/10439463.2016.1157594)

To link to this article: <https://doi.org/10.1080/10439463.2016.1157594>



© 2016 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 09 Mar 2016.



[Submit your article to this journal](#)



Article views: 6077



[View related articles](#)



[View Crossmark data](#)



Citing articles: 1 [View citing articles](#)



# The complex relationship between interrogation techniques, suspects changing their statement and legal assistance. Evidence from a Dutch sample of police interviews

Willem-Jan Verhoeven

Department of Criminology, Erasmus University Rotterdam, Rotterdam, The Netherlands

## ABSTRACT

This study aims to provide more insight in the complex and dynamic relationships between interrogation techniques, changes in suspects' statements and the presence of a lawyer. In doing so, it shows the importance of taking into account *the conditions* under which interrogation techniques can elicit statements from suspects. Based on a Dutch sample of 168 police interviews of suspects in homicide cases structural equation modelling is used to analyse (1) the extent to which interrogation techniques mediate suspects changing their statement and (2) the extent to which the presence of a lawyer moderates the relationship between interrogation techniques and suspects changing their statement. The results show that manipulative interrogation techniques mediate the changing statement of silent suspects compared to suspects who give a statement on personal matters or deny only during interviews *without* a lawyer. Based on the findings it can be concluded that the presence of a lawyer can change the dynamics of police interviews of suspects. This is an important conclusion given the European developments in strengthening the safeguards of the rights of suspects in police custody. The presence of a lawyer might contribute to reducing false confessions, avoid tunnel vision, and prevent miscarriages of justice.

## ARTICLE HISTORY


Received 3 September 2015  
Accepted 18 February 2016

## KEYWORDS

Interrogation techniques;  
suspects changing statement;  
legal advice; presence of  
lawyer

## 1. Introduction

The Dutch practice of interviewing suspects in police custody has recently been confronted with fundamental changes in suspects' rights to legal assistance as a result of events on both the national and the European level (Verhoeven 2014). The European Court of Human Rights (ECtHR) issued a judgment in the case of *Salduz v. Turkey* and formulated the basic premise that suspects being questioned by the police must have access to some form of legal assistance.<sup>1</sup> The *Salduz* judgment had far-reaching consequences for the Netherlands because, at the time of the judgment, the Dutch criminal justice system did not have a thoroughly regulated system that provided for legal assistance prior to, during and after police interviewing to safeguard the rights of suspects in police custody. Six months after the *Salduz* judgment, the Dutch Supreme Court made clear how the jurisprudence of the ECtHR must be interpreted in the Dutch criminal justice system.<sup>2</sup> Suspects were given the right to consult a lawyer prior to the interview by the police and specified categories of vulnerable suspects (juvenile suspects, mentally challenged suspects and those suspected of having committed serious criminal offences) were given the right to have a lawyer present during interviewing by the

**CONTACT** Willem-Jan Verhoeven  [verhoeven@law.eur.nl](mailto:verhoeven@law.eur.nl)

© 2016 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group  
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

police.<sup>3</sup> These developments in suspects' rights to legal assistance have resulted in the adoption of regulatory instruments in the Netherlands<sup>4</sup> as well as at the level of the European Union<sup>5</sup> (Mevis and Verbaan 2014).

After decades of discussions, prior consultation and the presence of a lawyer during police interviewing have become a reality in the Dutch criminal justice system (e.g. Blackstock *et al.* 2013). Even though research on England and Wales, where lawyers have been present for almost 30 years, suggests otherwise, practitioners, some professionals and researchers have suggested that the presence of lawyers during police interviews might interfere with the fact-finding process. This would ultimately degrade the usefulness of police interviews as a criminal investigative tool (Fijnaut 1987, 2001). When lawyers are present during interviewing, criminal investigators might be inclined to use certain techniques and strategies less or more (Leahy-Harland 2011), suspects might use their right to silence more often and more tenaciously, and lawyers might interrupt the interview. These aspects could change the outcome of police interviews in terms of obtaining statements from suspects. Given the potential impact of developments in legal assistance on the outcome of police interviews, it is important to increase our understanding of the way in which the dynamics of police interviews might change when a lawyer is present. This study therefore focuses on the complex nature of the relationship between suspects changing their statement, interrogation techniques and the presence of a lawyer. Two research questions are addressed: (1) To what extent are interrogation techniques related to suspects changing their statement? (2) To what extent is the relationship between interrogation techniques and changes in suspects' statements dependent on the presence of a lawyer?

Results from a recent meta-analysis show that there are insufficient empirical findings from field studies to draw decisive conclusions about the extent to which various interviewing methods elicit true statements from suspects (Meissner *et al.* 2012). The small sample sizes and the lack of advanced multivariate analytical techniques were given by Meissner *et al.* (2012) as the main reasons. The current study aims to contribute to the existing literature in two ways. First, the recent developments in legal assistance in the Netherlands and Europe offer a unique opportunity to study how *conditions* of police interviewing (in this study, giving suspects the right to have a lawyer present during police interviewing) might affect the relationship between interrogation techniques and the changing of statements by suspects. Second, structural equation modelling (SEM) is used, offering the opportunity to analyse *changes* in suspects' statements using longitudinal data (in this study, between start and end of the interrogation). SEM also offers the possibility to incorporate control variables to take into account important factors that might result in confounding the effects of interrogation techniques on the changing of statements by suspects.

## 2. Police interrogation techniques

### 2.1. Overarching categories of interviewing methods

Suspects are a valuable source of information in criminal investigations. In most cases, there were grounds for arresting the suspect and it is reasonable to assume that he/she can provide information about the crime and his/her involvement or the involvement of others. During a criminal investigation, suspects are interrogated in an attempt to find out what they do and do not know. However, suspects do not always willingly and spontaneously disclose (sufficiently detailed) information or are unable to provide information because they do not remember what happened or because they were not involved in the crime (they are innocent). Criminal investigators use a number of interrogation techniques in an attempt to elicit a statement (possibly a confession) from a suspect (Leo 1996, Pearse and Gudjonsson 1999, Soukara *et al.* 2009, Bull 2014).

In the literature, interrogation techniques are often divided into two overarching categories (Kelly *et al.* 2013, Walsh *et al.* 2015). On the one hand, there are the accusatorial, maximisation/minimisation, dominant and control-based methods. On the other hand, there are the information-gathering,

humane and rapport-based methods (see, e.g. Holmberg and Christianson 2002, Vrij *et al.* 2006, Häk-känen *et al.* 2009, Horgan *et al.* 2012, Meissner *et al.* 2012, Alison *et al.* 2014).<sup>6</sup> The methods in the two categories differ in terms of their primary goal. In general, the accusatorial methods are aimed at obtaining a confession from the suspect. The 'Reid technique' (Inbau *et al.* 2013) is the most familiar and most frequently used model in the accusatorial methods category. In short, this model consists of two phases. During the first phase, the criminal investigator takes a relatively neutral approach in an attempt to assess the guilt or extent to which the suspect is telling the truth/lies and to retrieve general information which can then be used against the suspect during the interrogation. The interrogation goes into its second phase if the criminal investigator is convinced that the suspect is lying/guilty. The interrogation consists of nine steps and is essentially based on three main elements: (1) custody and isolation from the outside world increase anxiety, nervousness and insecurity and the need to free oneself from the situation, (2) confrontation in which the suspect is accused of the crime and sometimes (manufactured) evidence is used to stress the certainty of the accusation and (3) minimisation means that the criminal investigator adopts a sympathetic attitude and morally justifies the crime, implying to the suspect that he/she may be treated leniently and a confession therefore seems the best way out (Kassin and Gudjonsson 2004, p. 43).

Contrary to the accusatorial methods, which are focused on obtaining a confession, the main aim of the information-gathering methods is to gather reliable information (Walsh and Bull 2015). In order to achieve this, it is important to build rapport, to ensure that the accusation and the seriousness of the crime are explained to the suspect and to stress the importance of honesty and truth/fact-finding. Questioning and pointing out contradictions in the statement of the suspect based on the available evidence is used later, after the suspect has had ample opportunity to tell his/her side of the story (Dando *et al.* 2015). In the context of police interviewing, the models based on the information-gathering methods are referred to as *investigative interviewing* or *ethical interviewing* (see Williamson 1993, Milne and Bull 1999, Williamson *et al.* 2009), the *PEACE model* (see Soukara *et al.* 2002) and the *Cognitive Interview* (see Memon *et al.* 2010).

## **2.2. The Dutch General Interviewing Strategy**

Despite the lack of published research findings on the interviewing methods used in the Netherlands, it is known that, at the time applicable to the data used in this study (2008–2010), criminal investigators were taught the General Interviewing Strategy (GIS) from the Questioning Manual (Amelsfoort *et al.* 2012). According to the GIS, the available tactical evidence should be used to enclose or corner the suspect. The first phase of the GIS concerns a (social) interview during which criminal investigators attempt to gather general information on, as well as determine the involvement of, the suspect using open questions. The second phase concerns the interrogation. During the interrogation, available evidence is used in combination with information gathered in the first phase to confront suspects with any contradictions in their statements.

The Questioning Manual states that rapport is an important aspect of the GIS. This is based on the notion that suspects communicate more easily in an open atmosphere (Moston and Engelberg 1993, Williamson 1993, Holmberg and Christianson 2002). Manipulation, described in the Questioning Manual as pushing, using tricks, threatening and making promises, is unacceptable, and in this respect the GIS relates to the information-gathering question methods. On the other hand, the GIS is based on the idea that the guilt of the suspect can and must be determined before the interrogation phase. In general terms, the GIS is therefore an interviewing method that attempts to influence a suspect who is presumed guilty into giving a statement (Vrij 2010), an approach that is consistent with the accusatory questioning methods. To summarise, it can be concluded that the GIS consists of aspects from both the accusatory and information-gathering interviewing methods and techniques from both categories can be expected to be used during Dutch interviews of suspects. As is discussed below in the measures section, the focus of this study is on accusatory methods.

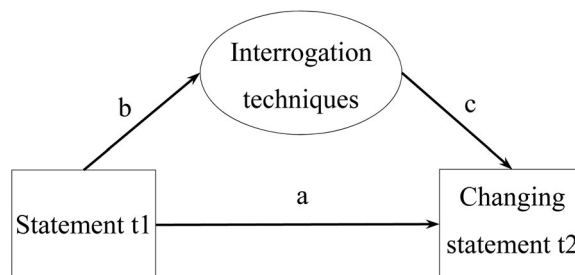
### 3. Interrogation techniques in relation to suspects' changing statements

The interaction that occurs between criminal investigators and suspects during interviewing is an intriguing field of research for social scientists (Lassiter and Ratcliff 2004). The decision-making process of suspects and the extent to which interrogation techniques can influence that process in an attempt to elicit (truthful) statements has received limited attention. Such research has shown that the decision of suspects to give a statement during the interview depends on the interaction between case and suspect characteristics, interrogation techniques and the pressure and stress suspects experience while in police custody (e.g. Moston *et al.* 1992, St-Yves and Deslauriers-Varin 2009). This study proposes that a greater understanding of the relationship between interrogation techniques and suspects' statements during interrogations can be achieved by adopting a longitudinal analytical model. In this section, a generic model is conceptualised based on assumptions derived from a literature review in which a recent meta-analysis (Meissner *et al.* 2012) plays a central role.

That meta-analysis was based on findings of both field studies and experimental studies. The findings of the field studies are first used to derive the assumptions regarding the relationships that make up the conceptual analytical model. This step is followed by a discussion about the extent to which the findings of field studies are supported by the findings of experimental studies. Conceptualising the longitudinal analytical model starts with the statement of the suspect. The main aim of interrogation techniques is to influence the behaviour of the suspect in an attempt to elicit a statement. Influencing the statements of suspects assumes that some suspects change their statements during the interview (Bull and Soukara 2010). For example, a suspect who initially denies having had anything to do with the crime (statement at t1) may decide during the interview to (partially) confess to the crime (changing statement at t2). In addition, it is assumed that the change in statement is dependent on the suspect's initial statement at t1. This relationship is depicted in Figure 1 by arrow (a).

Field studies have yielded three major findings on the relationship between interrogation techniques and suspects' statements. The first finding is that when certain interrogation techniques are used, suspects (partially) confess more often (Leo 1996, King and Snook 2009, Walsh and Bull 2012). The second finding concerns the relationship between using open questions and revealing evidence and the change from denial to confession during the interview (Bull and Soukara 2010). These findings suggest a positive relationship (c) in Figure 1. The third finding of field studies is that both the behaviour and attitude of suspects and criminal investigators seem to be dependent on the combination of suspect and case characteristics (Moston *et al.* 1992, Pearse *et al.* 1998). Criminal investigators react to the person they are interviewing and to the manner in which the person behaves. The techniques investigators use and the extent to which they use the techniques seem to be dependent on the preceding statement of the suspect. This is depicted by relationship (b) in Figure 1. Based on the empirical findings on the separate relationships depicted in Figure 1, it is assumed that the relationship between the initial statement and the change in statement is (partially) via interrogation techniques. This situation is also referred to as mediation (Little *et al.* 2007).

Field studies provide rich information about the interaction between criminal investigators and suspects but suffer from two important limitations. The first limitation is that no claims can be made about



**Figure 1.** Conceptual model of changing suspects' statement mediated by questionings techniques.

the causality of the relationship between interrogation techniques and suspects' statements (Bull and Milne 2004). A positive relationship between the interrogation techniques used and the statements given therefore does not imply that suspects are actually influenced by the interrogation techniques. However, the positive relationship between interrogation techniques and the information provided by suspects found in field studies is supported by the findings of experimental studies, which also show that techniques of both the accusatory and information-gathering methods result in more confessions (e.g. Kassin and Kiechel 1996, Russano *et al.* 2005, Narchet *et al.* 2011). The second limitation of field studies is that usually no claims can be made about the truthfulness of suspects' statements (but see Mann *et al.* 2004). In experimental studies, the ground truth is known. This enables researchers to determine whether respondents give a true or false statement. Based on experimental studies in the meta-analysis mentioned above, its authors concluded that techniques of information-gathering methods increase the likelihood of true confessions but do not significantly increase the likelihood of false confessions. Techniques of accusatory methods, on the other hand, seem to increase the likelihood of both true and false confessions (Meissner *et al.* 2012).

#### 4. Legal assistance in relation to interrogation techniques and suspects' statements

In order to be able to answer the second research question, the previous mediation model must be extended. Practitioners, some professionals and researchers believe that the chance of success of interviewing in terms of obtaining statements from suspects decreases when a lawyer is present during the interview (Verhoeven and Stevens 2013). In part, this might be because criminal investigators hold back in their attempt to influence and persuade suspects into giving a statement (Sullivan *et al.* 2008). On the other hand, Leahy-Harland (2011) found 'stronger' tactics when lawyers were present. It might also be that suspects feel supported by the presence of the lawyer and are therefore less inclined to give statements (Clarke *et al.* 2011). A third possibility is that lawyers might (even should) intervene when the criminal investigators exert too much pressure or when the suspect finds himself/herself in a difficult position. It is important to state here that during the Dutch experiment on which this study is based, lawyers had a passive role during an interview. This third possibility is therefore less prominent in this study.

The effect of the presence of a lawyer during the interview is expected to be visible in less strong relationships, depicted in Figure 1, compared to interviews without a lawyer (moderation). Incorporating the presence of a lawyer during interviewing results in a moderated mediation model (Little *et al.* 2007, Preacher *et al.* 2007).

### 5. Data, measures and analysis

#### 5.1. Data

The data used in this study were collected in the two-year research project (2008–2010) that evaluated the Dutch 'experiment with the presence of the lawyer during the first police interrogation' (Stevens and Verhoeven 2010, Verhoeven and Stevens 2012). Although all suspects had the right to have their respective lawyers present and did not have the opportunity to waive this right, not all lawyers were able or willing to come to the police station. As a result, the data obtained consist of interviews with and without a lawyer being present.

The data consist of 70 murder/manslaughter cases<sup>7</sup> in four Dutch police districts (43% in Amsterdam-Amstelland, 41% in Rotterdam-Rijnmond, 10% in Haaglanden, 6% in Midden-en West-Brabant). In these criminal cases, a total of 168 interviews of 94 suspects were observed. Of this total, 48% concerned a first interview, 36% a second interview and 15% a third interview. On average, 1.78 interviews per suspect were observed. Unfortunately, it proved difficult to collect reliable key information on suspects. The only suspect characteristics available are age and gender. Of the 94 suspects, 94.7% were male. The youngest suspect was 16 years old, the oldest suspect was 76 years old and the average age was 33.7.

Within the scope of the Dutch experiment, studios were built to record the interviews with four cameras. Researchers observed the video feeds real-time (while the suspect was interrogated) from a separate control room. This study was carried out qualitatively by preparing chronological reports of what happened during interviews. These reports mainly focus on the questions of the criminal investigators and the responses of suspects. [Appendix 1](#) gives an overview of examples of quotes for each interrogation technique observed. In addition, a structured observation schema was used for coding interrogation techniques and characteristics of the interviews, suspects and cases in a quantitative manner. The data therefore cover the whole interview and can be considered longitudinal data.

The start of the interview is defined as the moment at which the criminal investigators inform the suspect for the first time that the interview will start and inform the suspect of his/her rights. The end of the interview is defined as the moment at which the criminal investigators print the statement and give it to the suspect to read and sign (if the suspect is willing to do so). As a result, the interviews vary in length from 12 minutes to over 10 hours. This might influence the relationship between interrogation techniques and changes in suspects' statements because, during a longer interview, there is more opportunity to use different kinds of interrogation techniques and to use them more often. For this reason, it is important to use the duration of the interview as a control variable (see Section 5.3.4).

## 5.2. Inter-observer reliability

The interviews were observed by seven researchers who are academically experienced in the field of interviewing suspects and legal assistance. Several measures were taken to reduce inter-observer differences in the coding of the interrogation techniques. From the start of the project, the interpretation and rating of interrogation techniques were discussed on a regular basis with all observers. Differences in interpretation and rating were therefore identified and reduced at an early stage. In addition, observers related the coding of the interrogation techniques to the applicable extracts in the qualitative reports. They did so by putting the ID of the interrogation techniques between square brackets in the text after the fragment that relates to the interrogation technique (see [Box 1](#) for examples). All observation reports and coding schemes were then checked by one researcher to assess whether the ratings of the interrogation techniques reflected the description of interview proceedings derived from the qualitative report. In only a few cases were there obvious differences between the quantitative ratings and the qualitative report. In these cases, the initial observer adjusted the quantitative rating in the observation scheme. All quantitative ratings and qualitative reports were discussed by two researchers, a process which can be viewed as an alternative to an inter-observer reliability analysis.

### **Box 1. Example of coding quotes from criminal investigators (CI).**

CI 1: 'Now we know who the victim is. (Interrogator writes down the name of the victim and shows it to the suspect). Can you read who this is?'

Suspect: 'I won't say anything.'

CI 1: 'What should we tell his mother? She has a lot of questions. But you won't answer them [P9]. Can you imagine how frustrating that is?'

Suspect: (Smiles).

CI 1: 'How would the family react when they hear you are laughing?' [P9]

CI 1: 'Can you say his name?'

Suspect: 'I won't say anything.'

CI 1: '[Name of suspect]. Put yourself in the position of the family of [Name victim]. The autopsy on [Name victim] is today. We have to tell his mother that he will be cut open today. We can only say that the person who knows more about this: Laughs, bites his nails, wobbles his legs, and furthermore makes use of his right to silence. [P9] Would you like to say something? Express regrets? This will work in your advantage in court. [P15] But I don't see it and I don't hear it.'

CI 1: '[Name witness] told us that you are successful in theatre. That won't work with the line: "I won't say anything". The victim will never speak again. And why? Why did this happen? We won't rule out the fact that you might have spoken with other people. Do you want them to decide over you? You don't want that. Tomorrow you will be brought before the prosecutor. Does it make sense to interrogate you before that?'

CI 2: 'A mother has the right to know what happened to her child. Can you imagine how it feels to outlive your own child? The relation between mother and child is the strongest there is.' [P9]



### 5.3. Measures

#### 5.3.1. Interrogation techniques

Information is available on 12 more coercive interrogation techniques<sup>8</sup> (see Table 1) that were selected based on previous research which found that these techniques are used during the interviewing of suspects in serious criminal cases such as murder/manslaughter (Baldwin 1993, Leo 1996, Kassin *et al.* 2007, King and Snook 2009). For each of the 12 interrogation techniques, the researchers indicated whether or not the technique was used during the interview. If the technique was used, the researchers indicated the degree to which it was used in the interview using a 5-point scale where 1 = 'used very little' and 5 = 'used very much' (this coding scale is comparable to the one used by Soukara *et al.* 2009). Table 1 shows that in most of the interviews observed, the 12 accusatory techniques were never used. The methodological consequence of the fact that the interrogation techniques observed are not used often is that the variables are skewed. Because of the ordinal scale and the skewed distribution, the variables are used as categorical measured variables in the measurement model. The model fit is assessed based on the weighted least-squares (WLSMV) estimating procedure in Mplus (Muthén and Muthén 1998–2007).

#### 5.3.2. Changing of statements by suspects

The statement of a suspect at the start and at the end of the interview is used to assess the change in a suspect's behaviour. Giving a statement is measured as the extent to which suspects disclose information.<sup>9</sup> Five categories are distinguished: (1) remain silent, (2) speak about personal and common affairs, (3) speak about the offence, (4) deny and (5) confess. The qualitative reports of the observations are used to classify interviews based on suspects' statements at the start and at the end of interviews.

Table 2 shows that in most interviews (46.4%), suspects talk about personal and common matters at the start. Examples include providing personal details and talking about work, sport or hobbies. In 33.9% of the interviews, suspects are silent at the start. This means that suspects do not say anything or that they actively use their right to remain silent. In 13.1% suspects give a statement relating to the

**Table 1.** Descriptive statistics of interrogation techniques, suspects' statement, legal assistance and control variables.

(n = 168)	Not	Very little	Little	Some-what	Much	Very much
Interrogation techniques:						
Confrontation with (circumstantial) evidence	48.2%	12.5%	12.5%	15.5%	8.3%	3.0%
Moral appeal	50.6%	13.1%	12.5%	11.9%	6.0%	6.0%
Confrontation with statements of others	55.4%	8.9%	14.9%	8.9%	7.7%	4.2%
Leading questioning	56.0%	15.5%	11.3%	8.3%	6.0%	3.0%
Stress consequences of non-cooperation	62.5%	11.9%	7.1%	13.1%	4.2%	1.2%
Challenge inconsistencies in suspect's statement	67.3%	13.7%	8.9%	4.8%	3.6%	1.8%
Show impatience, frustration, and anger	71.4%	10.7%	4.8%	7.1%	4.2%	1.8%
Present hypothetical scenarios	77.4%	10.7%	7.7%	3.6%	0.6%	0.0%
Interrupt suspect's statement	81.5%	7.1%	5.4%	4.8%	1.2%	0.0%
Give moral justifications	92.8%	3.6%	1.8%	1.8%	0.0%	0.0%
Make promises	95.8%	3.0%	0.6%	0.6%	0.0%	0.0%
Physical intimidation	95.8%	3.0%	0.6%	0.6%	0.0%	0.0%
	N	Min.	Max.	Mean	S.D.	
Suspects' statement start questioning:						
Silent	168	0	1	0.34	–	
Statement personal/denial	168	0	1	0.50	–	
Statement offence/confess	168	0	1	0.16	–	
Change in statement	168	0	1	0.47	–	
Presence lawyer	168	0	1	0.70	–	
Control variables:						
Duration of questioning	166	.12	10.72	2.32	1.70	
First questioning	168	0	1	0.48	–	



offence at the start. In these cases, suspects admit, for example, to having been at the place where the crime was committed. In 3.6% suspects at the start deny to have any involvement in the crime. Finally, in 3% suspects at the start confess to having committed the crime.

The data contain relatively few interviews during which suspects deny or confess at the start. To make sure that there are enough observations in each cell during the analyses, the categories 'personal affairs statement' and 'denial' are combined (because in neither do the suspects admit anything) and the categories 'offence statement' and 'confession' are combined. For the analyses, the categorical variable 'statement at start' is recoded into three dummy variables: (1) silent, (2) statement personal affairs/denial and (3) statement offence/confess. [Table 1](#) shows that, at the start, in about 34% of the interviews suspects remain silent, in about 50% suspects give a statement on personal and common matters or deny their involvement and in about 16% suspects give a statement on the offence or confess.

The results from [Table 2](#) also show that in 47% of the interviews (the percentages above and below the diagonal in [Table 2](#) combined) suspects change their statement. For example, in 17.3% of the interviews, they change from a statement on personal matters to a statement on the offence (increasing disclosure of information). In 1.8% suspects change from giving a statement on the offence to remaining silent (decreasing disclosure of information). A dummy variable is constructed to capture the changing of relevant statements by suspects between the start and the end.

### 5.3.3. Legal assistance

A dummy variable is used to differentiate interviews according to the presence or absence of a lawyer. [Table 1](#) shows that a lawyer was present in 70% of the interviews. This dummy variable is used as the grouping variable to test whether mediation of the relationship between the statement at the start and the change in statement brought about by interrogation techniques is moderated by the presence of a lawyer. This is further explained in Section 5.4.

### 5.3.4. Control variables

To take general differences between interviews into account, two control variables are used: (1) duration of the interview and (2) first interview. Duration of the interview is an important control because a lengthy interview can in itself be seen as an interrogation technique. In addition, the longer an interview, the greater the probability of different interrogation techniques being used and the more intensively these techniques can be used (Drizin and Leo 2004, Kassin and Blair 2005, Feld 2006). The duration of the interview is measured in hours corrected for the total amount of intermissions. [Table 1](#) shows an average length of two and a half hours. The shortest lasted only 12 minutes, whereas the longest took more than 10 hours. The duration of two could not be determined because the observers missed the start or the end.<sup>10</sup>

An important aspect of the GIS is the sequence of the interviews. The first interview should be used as a social interview during which personal details are obtained and criminal investigators build rapport. During subsequent interviews, a variety of interrogation techniques can be used in

**Table 2.** Cross tabulation of suspects' statement at the start and at the end of the interview (frequencies between brackets).

Statement end interview	Statement start interview						Total
	Silent	Statement personal affairs	Statement offence	Denial	Confess		
Silent	31.0 (52)	8.3 (14)	1.8 (3)	0.6 (1)	—	—	41.7 (70)
Statement personal affairs	1.2 (2)	10.7 (18)	—	—	—	—	11.9 (20)
Statement offence	0.6 (1)	17.3 (29)	6.5 (11)	1.2 (2)	—	—	25.6 (43)
Denial	0.6 (1)	3.0 (5)	4.2 (7)	1.8 (3)	—	—	9.5 (16)
Confess	0.6 (1)	7.1 (12)	0.6 (1)	—	3.0 (5)	—	11.3 (19)
Total	33.9 (55)	46.4 (78)	13.1 (22)	3.6 (6)	3.0 (5)	—	100.0 (168)

an attempt to elicit a statement from the suspect (Amelsfoort *et al.* 2012). The extent to which interrogation techniques are used and, related to that, the possibility to influence suspects' statements can be dependent on the sequence of the interviews. To assess these differences, a dummy variable is used to indicate whether the interview is the first one or a subsequent one. Table 2 shows that 48% are first interviews.

#### 5.4. Analysis

SEM is used to analyse the extent to which the 12 selected interrogation techniques mediate the change in statement and whether this mediation is moderated by the presence of a lawyer. SEM is described as a combination of factor analysis and multiple regression analysis and consists of two parts: (1) a measurement model and (2) a structural model (Schreiber *et al.* 2006). The measurement model concerns the factor analysis which is used to reduce a set of measured (observed) variables to one or more latent variables (not observed directly).<sup>11</sup> In line with previous research (Pearse and Gudjonsson 1999, Kassin *et al.* 2007), the factor analysis (measurement model) is adopted to show whether the 12 interrogation techniques should be regarded as one latent variable (dimensions of pressure or mesolevel interrogation domain) or as multiple latent variables (several dimensions/mesolevel interrogation domains).

The structural model consists of a series of regression equations used to estimate the direct, indirect and total effects of exogenous (independent) variables on endogenous (dependent) variables. Both exogenous and endogenous variables may be measured or latent. As discussed above, the data used in this study concern complete interviews. In this respect, the data can be considered as longitudinal data. From this basic assumption it can be argued that the statement of the suspect at the start (t1) precedes the deployment of interrogation techniques, which in turn precedes the change in the suspect's statement at the end (t2). This results in the time-dependent order of variables given below (mediation):

- Regression of interrogation techniques on silent and statement on offence/confess at the start (t1).<sup>12</sup>
- Regression of changing statement (t2) on interrogation techniques and on silent and statement on offence/confess at the start (t1).

Two structural models are estimated. The basic model estimates the regression equations as described above based on the complete sample of interviews. This model is used to test whether the relationship between suspects' statements at the start and changes in suspects' statements by the end is mediated by the use of interrogation techniques. In addition, the aim of this study is to test whether this mediation is dependent on the presence of a lawyer during the interview. This is tested with a two-group model, which estimates the relationships between the variables as described above for the group 'no lawyer present' and for the group 'lawyer present'.

Additional choices were made concerning the analytical procedure. First, in this study the SEM models are estimated in two steps. The measurement model for categorical measured variables (interrogation techniques) are estimated during the first step. The measurement model indicates whether distinguishing dimensions/mesolevel interrogation domains adequately fit the data (see 'measurement model' section). The structural model is estimated during the second step. This analytical strategy is chosen because the combined estimation of the measurement and structural model would result in an over-specified model. This two-step strategy has been employed in other studies that used SEM (see, e.g. Hoffman *et al.* 2013). Second, the estimated models consist of a combination of categorical and continuous variables. Previous research suggests that under these circumstances robust weighted least-squares (WLSMV) procedures are advisable because in most cases they result in reliable estimates of test statistics, parameters and standard errors (e.g. Flora and Curran 2004, Spohn *et al.* 2014). Third, the data used in this study have a nested (or hierarchical) structure.

Two levels are distinguished: interviews (level 1) which are nested within suspects (level 2). Multilevel models should be used to analyse data with a nested structure (Snijders and Bosker 1999). The models estimated in this study do not contain level-2 variables.<sup>13</sup> Under these conditions, the 'type = complex' analysis can be used in Mplus. Using 'type = complex', the standard errors are corrected for the level-2 variance (Muthén and Muthén 1998–2007), in this study the level of the suspects (e.g. correction for variation between suspects in changing statements at the level of the interview).

## 6. Results

### 6.1. Measurement model: manipulative and confrontational techniques

Manipulation and confrontation are two mechanisms of influencing suspects during interviewing that have been identified in previous studies (e.g. Pearse and Gudjonsson 1999, Kelly *et al.* 2013). The measurement model is used to show whether the 12 interrogation techniques can be divided into manipulative and confrontational techniques. This is done in several steps. First, a model is estimated based on all 12 interrogation techniques loading on one latent variable. The fit of this model (CFI = .898; RMSEA = .070) is not acceptable when using  $CFI \geq .95$  and  $RMSEA < .06$  as a rule of thumb.<sup>14</sup> Second, a model is estimated based on seven observed variables for the latent variable manipulative techniques and five observed variables for the latent variable confrontational techniques. Although the fit of this model (CFI = .942; RMSEA = .054) is better than the initial model, the observed variable *making promises* has a low standardised factor loading (.375) on latent variable manipulative techniques. Furthermore, additional analysis has shown that the observed variable *confrontation with statements of others* loads on confrontational as well as manipulative techniques. These two variables are therefore left out of the analyses. Thus the final measurement model is estimated based on five observed variables for latent variable manipulative techniques and five observed variables for latent variable confrontational techniques. The results of the final measurement model are presented in Table 3. The fit indices show an acceptable model fit (CFI = .952; RMSEA = .057) and the standardised factor loadings of all interrogation techniques are larger than .45.

The results from this model show that the interrogation techniques can be distinguished into two dimensions/mesolevel interrogation domains. First, the confrontational techniques can be described as an interviewing method that resembles the 'cornering tactic' advocated by the Dutch GIS. Using available (circumstantial) evidence and pointing out contradictions, criminal investigators try to corner the suspect so that giving a statement seems the easiest way out of the interview (Amelsfoort

**Table 3.** Measurement model of interrogation techniques ( $n = 168$ ).

Variables	Factor loading <sup>a</sup>	(SE)	Standardised loading
Manipulative techniques			
Present hypothetical scenarios [P6]	1.000	(.000)	.581
Leading questioning [P7]	.898	(.214)	.522
Moral appeal [P9]	1.141	(.226)	.663
Give moral justifications [P11]	1.377	(.285)	.800
Stress consequences of non-cooperation [P15]	.927	(.180)	.539
Confrontational techniques			
Confrontation with (circumstantial) evidence [P4]	1.000	(.000)	.598
Challenge inconsistencies in suspect's statement [P12]	1.108	(.160)	.663
Interrupt suspect's statement [P13]	1.208	(.185)	.723
Show impatience, frustration, and anger [P14]	1.344	(.164)	.804
Physical intimidation [P16]	1.195	(.180)	.715
Model fit			
CFI	.952		
RMSEA	.057		

Notes: CFI, comparative fit index; RMSEA, root mean square error of approximation; SE, standard error.

<sup>a</sup>A factor loading of 1.000 means that the observed variable is used to fix the scale of the latent variable.

et al. 2012). Second, the manipulative techniques can best be described as an interviewing method with which criminal investigators attempt to persuade the suspect into giving a statement. It should be noted that this involves a different level of manipulation than the structural and intensive misleading to which, for example, American suspects can be exposed (Skolnick and Leo 1992, Kassin et al. 2007).

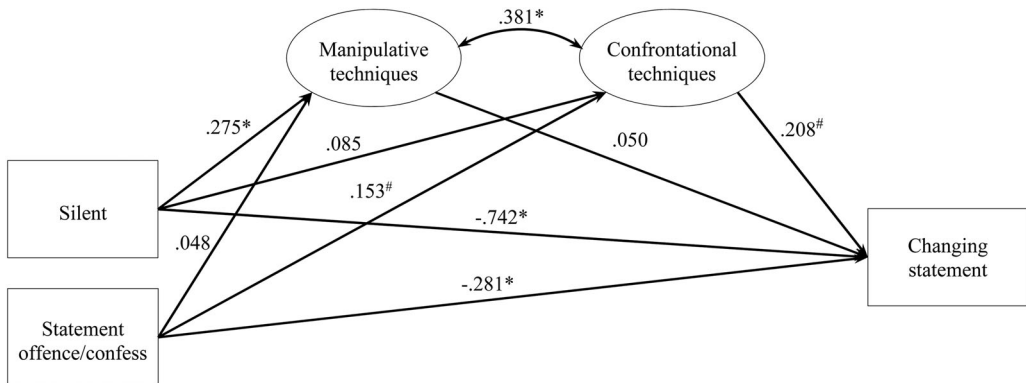
**6.2. Structural models: relationships between interrogation techniques, suspects’ statements and the presence of a lawyer**

The results from the structural models are presented in Figures 2 to 4, which are derived from the table in Appendix 2. The basic model tests whether interrogation techniques mediate the relationship between suspects’ statements at the start of the interview and changes in their statements. This basic model has an acceptable model fit (CFI = .983; RMSEA = .037). Figure 2 shows significant negative relationships between changing a statement and silence at the start of the interview ( $\beta = -.742$ ) and a statement on the offence/confession at the start of the interview ( $\beta = -.281$ ). This means that suspects who remain silent and suspects who give a statement on the offence or confess at the onset of the interview (not surprisingly) change their statement at the end less often than suspects who talk about personal and common matters or deny at the start.

The results also show a significant positive relationship between silence at the start and manipulative techniques ( $\beta = .275$ ) and between a statement on the offence/confession and confrontational techniques ( $\beta = .153$ ). This indicates that, on average, criminal investigators use more manipulative techniques when suspects remain silent at the start of the interview compared to when suspects give a statement on personal and common matters or deny. On average, criminal investigators also use more confrontational techniques when suspects at the start give a statement on the offence or confess compared to when suspects give a statement on personal and common matters or deny.

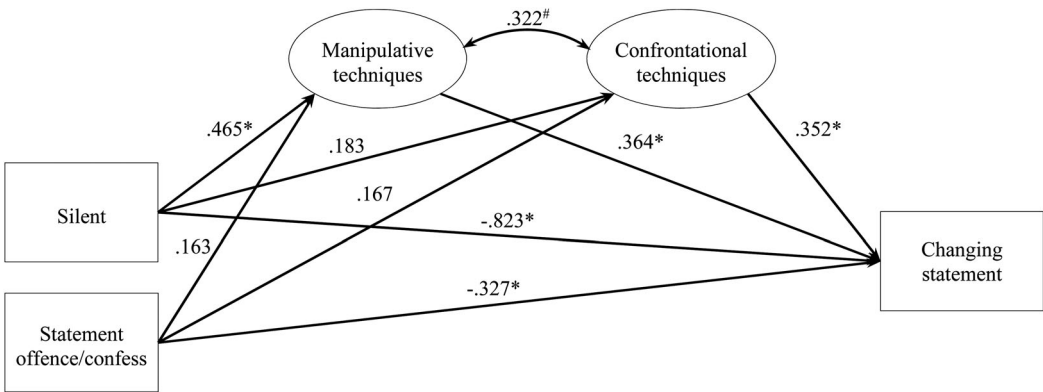
Furthermore, only confrontational techniques have a significant positive relationship with the changing of a statement ( $\beta = .208$ ). When investigators use, on average, more confrontational techniques, suspects change their statements more often.

From the relationships as a whole, as presented in Figure 2, it follows that only the relationship between a statement on the offence or a confession at the start and a changed statement at the end might be mediated by confrontational techniques. However, additional tests indicate that



Notes: The standardised coefficients are based on the ‘basic’ model presented in Appendix 2.  
 †p < .10; #p < .05; \*p < .01 (two-tailed).

**Figure 2.** Structural ‘basic’ model of interrogation techniques, statement at the start of the interview, and changing statement (n = 168).



Notes: The standardised coefficients are based on the 'no lawyer present' model presented in Appendix 2.

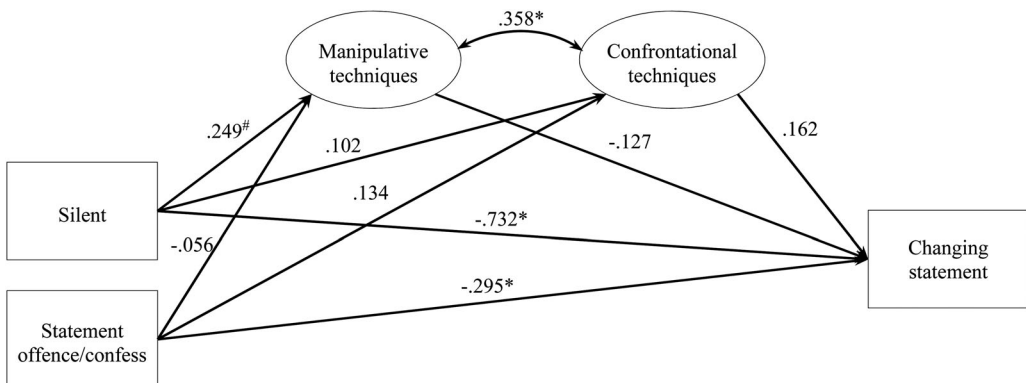
†p < .10; #p < .05; \*p < .01 (two-tailed).

**Figure 3.** Structural 'no lawyer present' model of interrogation techniques, statement at the start of the interview, and changing statement ( $n = 50$ ).

no such indirect effects are significant (see Table 4). Based on the results from the basic model, it can be concluded that the various interrogation techniques do not individually seem to mediate the relationship between suspects' statements at the start of the interview and the change in statements.

The second question posed in this study is whether the relationships between a statement at the start, interrogation techniques and a changed statement are moderated by a lawyer being present during the interview. In order to answer this question the relationships from the basic model are estimated in a two-group model (with a lawyer present or not). The results from this model are presented in Figures 3 and 4 (derived from the results presented in Appendix 2). The two-group model has an acceptable model fit ( $CFI = .980$ ;  $RMSEA = .039$ ), indicating that the presence of a lawyer moderates the relationships between a statement at the start, interrogation techniques and a changed statement.

The main difference between the two groups is that the relationships between a changed statement and silence ( $b = -2.481$ ), manipulative techniques ( $b = .467$ ) and confrontational techniques ( $b = .525$ ) are stronger in the no lawyer present group (lawyer present group, respectively:  $b = -2.106$ ;



Notes: The standardised coefficients are based on the 'lawyer present' model presented in Appendix 2.

†p < .10; #p < .05; \*p < .01 (two-tailed).

**Figure 4.** Structural 'lawyer present' model of interrogation techniques, statement at the start of the interview, and changing statement ( $n = 118$ ).

**Table 4.** Direct, indirect, and total effects of statement at the start of the interview.

Effect	Specific paths and total effects	Basic model	No lawyer group	Lawyer group
		$\beta$	$\beta$	$\beta$
Direct	Silent $\rightarrow$ changing statement	-.742*	-.823*	-.732*
Indirect	Silent $\rightarrow$ manipulative techniques $\rightarrow$ changing statement	.014	.169*	-.032
	Silent $\rightarrow$ confrontational techniques $\rightarrow$ changing statement	.018	.064	.017
Total		-.711*	-.589*	-.747*
Direct	Statement offence/confess $\rightarrow$ changing statement	-.247*	-.327*	-.295*
Indirect	Statement offence/confess $\rightarrow$ manipulative techniques $\rightarrow$ changing statement	.002	.059	.007
	Statement offence/confess $\rightarrow$ confrontational techniques $\rightarrow$ changing statement	.032	.059	.022
Total		-.281*	-.209	-.267*

<sup>†</sup> $p < .10$ ; <sup>#</sup> $p < .05$ ; <sup>\*</sup> $p < .01$  (two-tailed).

$b = -.291$ , n.s.;  $b = .355$ , n.s.). This indicates that when a lawyer is not present, the statements of suspects who remain silent at the start compared to suspects who give a statement on personal matters or deny change less often between the start and the end than when a lawyer is present.

In addition, when a lawyer is not present, suspects change their statements more often between the start and the end when criminal investigators use manipulative and confrontational techniques than during interviews at which a lawyer is present.

Finally, silence has a stronger relationship with manipulative techniques in the no lawyer present group than in the lawyer present group. This means that during interviews with no lawyer present, criminal investigators use on average more manipulative techniques when dealing with silent suspects compared to suspects who initially give a statement on personal matters or deny than during interviews with the lawyer present.

From the relationships as a whole, as presented in Figures 3 and 4, it follows that only the relationship between silence and changing a statement might be mediated by manipulative techniques in the no lawyer group. Additional tests show that this indirect effect of silence at the start on changing a statement via manipulative techniques is significant (see Table 4). The total standardised coefficient of the effect of silence on changing a statement when taking into account manipulative and confrontational techniques is  $\beta = -.589$ , with a significant standardised coefficient of  $\beta = .169$  for the specific indirect effect of silence on changing a statement via manipulative techniques. Table 4 shows that the direct effect of silence on changing a statement is  $\beta = -.823$ . From the comparison of the total effect and the direct effect, it follows that the relationship between silence at the start and changing a statement is suppressed. By taking into account manipulative techniques, the relationship between silence and changing a statement is reduced by .169 (see indirect effect in Table 4: silence at the start  $\rightarrow$  manipulative techniques  $\rightarrow$  changing a statement).

## 7. Conclusion

In this study SEM is used on a relatively large sample of Dutch interviews of homicide suspects in an attempt to identify mechanisms through which suspects can be influenced to change their statement. Based on ten of twelve accusatory interrogation techniques selected for this study two mechanisms could be identified: confrontation and manipulation. Confrontational techniques resemble the 'cornering tactic' advocated by the Dutch GIS (Amelsfoort *et al.* 2012). Criminal investigators

use available (circumstantial) evidence to point out contradictions in an attempt to corner the suspect so that giving a statement seems the easiest way out of the interview (Soukara *et al.* 2009). Manipulative techniques can best be described as an interviewing method criminal investigators use in an attempt to (psychologically) persuade suspects into giving a statement (Kassin *et al.* 2010).

Furthermore, results show that criminal investigators seem to use manipulative techniques instead of confrontational techniques in an attempt to elicit a statement of suspects who initially remain silent. When suspects initially give a statement on the offence or confess criminal investigators seem to use confrontational techniques. The reason might be that they use the available information to get a more detailed statement from the suspect. Only confrontational techniques seem to be related to changes in suspects' statements.

Taking into account the presence of a lawyer reveals that confrontational and manipulative techniques *do not* seem to be related to changes in suspects' statement when the lawyer is present but seem *to do so* when the lawyer is not present. Furthermore, only when the lawyer is not present, manipulative techniques seem to have a stronger effect on silent suspects changing their statements than on suspects talking about personal and common matters or who deny (mediation). Other relationships do not seem to be influenced by the presence of a lawyer. Criminal investigators seem to use manipulative techniques when confronted with a suspect who initially remains silent regardless of whether the lawyer is present or not. No significant relationships are found between initial statement and confrontational techniques during interviews with and without a lawyer.

The findings of this study indicate that the presence of a lawyer can change interview dynamics. Manipulative techniques seem to mediate the changing statement of suspects who initially remain silent only when the lawyer is not present. This is a valuable contribution to the relevant body of literature because it shows the importance of taking into account *the conditions* (in this study legal assistance) under which specific interviewing methods might result in obtaining information from suspects (Kassin *et al.* 2010).

It is important to keep in mind that this is a field study, which intrinsically comes with two major limitations. First, no claims can be made about the causality of the relationships. Although information on the whole interview can be considered as longitudinal data, the analytical design does not rule out that the observed changes in suspects' statements are caused by factors other than interrogation techniques, such as case characteristics, the available evidence, the characteristics of suspects, the course of the interview, and the structure of the interview (Moston *et al.* 1992). However, SEM offers the opportunity to control for such important factors that might result in confounding effects of interrogation techniques and sets a new direction for future research. Second, no claims can be made about interrogation techniques eliciting *true* statements.

Another issue concerns the finding that an important specific interrogation technique (e.g. Kassin *et al.* 2007, King and Snook 2009) – *confrontation with statements of others* – seems to belong to both confrontational as well as manipulative techniques (having a negative impact on the fit statistics) and is therefore left out of the analyses. Looking at examples of this technique such as 'They say the weapon is yours.' and 'You get it that people are pointing at you considerably. Your buddies are grassing on you, aren't they?!' (see Appendix 1) suggests that criminal investigators use statements of others to both confront suspects with results from the criminal investigation as well as influence the suspect in a more psychological way.

Despite these limitations, the findings indicate that the presence of a lawyer during the interviewing of suspects might change to some extent the complex, dynamic relationship between interrogation techniques and suspects changing their statements. This is an important finding given the recent European developments in strengthening the safeguards of suspects' rights at the stage of police interviewing. On the one hand, the presence of a lawyer might prevent criminal investigators from using coercive interrogation techniques in an attempt to secure a statement that, given the coercive element, may be a false one. On the other hand, the presence of a lawyer might strengthen the position of the suspect so that he/she is less susceptible to coercive interrogation techniques.



Either way, the presence of a lawyer might induce criminal investigators to focus on obtaining valuable and reliable information from the suspect being interviewed using less coercive interrogation techniques. Ultimately, the presence of a lawyer might contribute to a reduction in false confessions, prevent tunnel vision and prevent miscarriages of justice.

## Notes

1. *Salduz v. Turkey*, ECtHR Grand Chamber (2008), No. 36391/02.
2. Dutch Supreme Court, 30 June 2009, ECLI:NL:HR:2009:BH3081.
3. The Dutch Directive on legal counsel prior to and during police interrogations, 'Staatscourant', 16 March 2010, No. 4003.
4. Draft Bill of 13 February 2014, retrieved from: <http://www.rijksoverheid.nl/nieuws/2014/02/13/recht-op-bijstand-van-raadsman-tijdens-politieverhoor.html>. A revised version of the Draft Bill was published on 15 April 2011, retrieved from: <http://www.rijksoverheid.nl/documenten-en-publicaties/regelingen/2011/04/18/wetsvoorstel-rechtsbijstand-en-politieverhoor.html>.
5. Directive 2013/48/EU of the European Parliament and of the Council of 22 October 2013, OJ 2013 L 294.
6. For reasons of readability, 'accusatory methods' will henceforth be used to refer to the first category and 'information-gathering methods' will henceforth be used to refer to the second category.
7. It is likely that the selection of serious criminal cases resulted in above-average use of coercive interrogation techniques and relatively many suspects using their right to silence. It is therefore not possible to extend any conclusions drawn to other, less serious offences.
8. Using the data from the Dutch experiment limited the information available to 12 accusatory methods.
9. With the data used in this study, it was not possible to determine whether suspects were telling the truth or not.
10. Maximum likelihood estimation is used in Mplus assuming that the missing data is completely random. The models were also estimated leaving the two interrogations with missing data on duration of interrogation out of the analyses. The results were similar and the conclusions remained the same.
11. In the visual representation of SEM models, the measured variables are depicted as rectangular shapes while the latent variables are depicted as elliptical shapes.
12. In the analyses, *statement on personal and common matters or deny* is used as the reference category.
13. Information is available on two suspect characteristics (level 2): age and gender. Additional two-level models incorporating these variables as covariates showed no significant effects and the general conclusions remained similar.
14. Many indices are available for determining the model fit. To make determining the model fit even more complex, there is no consensus on which fit index is best used in a given situation nor on the thresholds of the indices (see, e.g. Schreiber *et al.* 2006; Lei 2009). In this study, the CFI and the RMSEA are used to assess the fit of the models. As a rule of thumb, a CFI $\geq$ .95 and a RMSEA $<$ .06 are used for an acceptable model fit.

## Acknowledgements

I thank the anonymous reviewers for their insightful and constructive feedback on an earlier version of this manuscript.

## Disclosure statement

No potential conflict of interest was reported by the author.

## Funding

This work was supported by the Research and Documentation Centre of the Dutch Ministry of Justice (WODC) [grant number 1598].

## References

- Alison, L., *et al.*, 2014. The efficacy of rapport-based techniques for minimizing counter-interrogation tactics amongst a field sample of terrorists. *Psychology, public policy, & law*, 20, 421–430.
- Amelsfoort, A., van Rispens, I., and Grolman, H., 2012. *Handleiding verhoor*. 's-Gravenhage: Reed Business.
- Baldwin, J., 1993. Police interview techniques. Establishing truth or proof? *British journal of criminology*, 33, 325–352.

- Blackstock, J., et al., 2013. *Inside police custody: an empirical account of suspects' rights in four jurisdictions*. Mortsel: Intersentia.
- Bull, R., ed., 2014. *Investigative interviewing*. New York: Springer.
- Bull, R. and Milne, R., 2004. Attempts to improve the police interviewing of suspects. In: G.D. Lassiter, ed. *Interrogations, confessions, and entrapment*. New York: Kluwer Academic, 182–195.
- Bull, R. and Soukara, S., 2010. Four studies of what really happens in police interviews with suspects. In: G.D. Lassiter and C. A. Meissner, ed. *Police interrogations and false confessions: current research, practice, and policy recommendations*. Washington, DC: American Psychological Association, 81–95.
- Clarke, C., Milne, R., and Bull, R., 2011. Interviewing suspects of crime: the impact of PEACE, training, supervision and the presence of a legal advisor. *Journal of investigative psychology and offender profiling*, 8, 149–162.
- Dando, C.J., et al., 2015. Helping to sort the liars from the truth-tellers: the gradual revelation of information during investigative interviews. *Legal and criminological psychology*, 20, 114–128.
- Drizin, S.A. and Leo, R.A., 2004. The problem of false confessions in the post-DNA world. *North Carolina law review*, 82, 891–1007.
- Feld, B.C., 2006. Police interrogation of juveniles: an empirical study of policy and practice. *The journal of criminal law & criminology*, 97, 210–316.
- Fijnaut, C.J.C.F., 1987. *De toelating van raadslieden tot het politieële verdachtenverhoor*. Arnhem: Gouda Quint.
- Fijnaut, C.J.C.F., 2001. De toelating van de raadsman tot het politieële verdachtenverhoor. Een status questionis op de drempel van de eenentwintigste eeuw. In: M.S. Groenhuijsen & G. Knigge, ed. *Het vooronderzoek in strafzaken. Tweede interimrapport onderzoeksproject Strafvordering*. Deventer: Gouda Quint, 671–755.
- Flora, D.B. and Curran, P.J., 2004. An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological methods*, 9, 466–491.
- Häkkinen, H., et al., 2009. Police officers' views of effective interview tactics with suspects: the effects of weight of case evidence and discomfort with ambiguity. *Applied cognitive psychology*, 23, 468–481.
- Hoffman, J.P., Erickson, L.D., and Spence, K.R., 2013. Modeling the association between academic achievement and delinquency: an application of interactional theory. *Criminology*, 51, 629–660.
- Holmberg, U. and Christianson, S.-Å., 2002. Murderers' and sexual offenders' experiences of police interviews and their inclinations to admit or deny crimes. *Behavioral sciences and the law*, 20, 31–45.
- Horgan, A.J., et al., 2012. Minimization and maximization techniques: assessing the perceived consequences of confessing and confession diagnosticity. *Psychology, crime, & law*, 18, 65–78.
- Inbau, F.E., et al., 2013. *Criminal interrogation and confessions*. 5th ed. Burlington: Jones & Bartlett Learning.
- Kassin, S.M. and Blair, J.P., 2005. A test of the unusual false confession perspective using cases of proven false confessions. *Criminal law bulletin*, 41, 127–144.
- Kassin, S.M., et al., 2010. Police-induced confessions: risk factors and recommendations. *Law and human behavior*, 34, 3–38.
- Kassin, S.M. and Gudjonsson, G.H., 2004. The psychology of confessions: a review of the literature and issues. *Psychological science in the public interest*, 5, 33–67.
- Kassin, S.M. and Kiechel, K.L., 1996. The social psychology of false confessions: compliance, internalization, and confabulation. *Psychological science*, 7, 125–128.
- Kassin, S.M., et al., 2007. Police interviewing and interrogation: a self-report survey of police practices and beliefs. *Law and human behavior*, 31, 381–400.
- Kelly, C.E., et al., 2013. A taxonomy of interrogation methods. *Psychology, public policy, and law*, 19, 165–178.
- King, L. and Snook, B., 2009. Peering inside a Canadian interrogation room: an examination of the Reid model of interrogation, influence tactics, and coercive strategies. *Criminal justice and behavior*, 36, 674–694.
- Lassiter, G.D. and Ratcliff, J.J., 2004. Exposing coercive influences in the criminal justice system: an agenda for legal psychology in the twenty-first century. In: G.D. Lassiter, ed. *Interrogations, confessions, and entrapment*. New York: Springer, 1–8.
- Leahy-Harland, S., 2011. *Police interviewing of serious crime suspects* (Doctoral dissertation). Leicester Research Archive Database. Available from: <http://hdl.handle.net/2381/28230>.
- Lei, Pui-Wa., 2009. Evaluating estimation methods for ordinal data in structural equation modeling. *Quality and quantity*, 43, 495–507.
- Leo, R.A., 1996. Inside the interrogation room. *Journal of criminal law and criminology*, 86, 266–303.
- Little, T.D., et al., 2007. Structural equation modeling of mediation and moderation with contextual factors. In: T.D. Little, J. A. Bovaird, and N.A. Card, ed. *Modeling contextual effects in longitudinal studies*. Mahwah, NJ: Lawrence Erlbaum Associates, 207–230.
- Mann, S., Vrij, A., and Bull, R., 2004. Detecting true lies: police officers' ability to detect suspects' lies. *Journal of applied psychology*, 89, 137–149.
- Meissner, C.A., et al., 2012. Interview and interrogation methods and their effects on true and false confessions. *Campbell systematic reviews*, 2012, 13.
- Memon, A., Meissner, C.A., and Faser, 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.

- Mevis, P.A.M. and Verbaan, J.H.J., 2014. Legal assistance and police interrogation: (problematic aspects of) Dutch criminal procedures in relation to European Union and the Council of Europe. *Erasmus law review*, 7, 175–190.
- Milne, R. and Bull, R., 1999. *Investigative interviewing: psychology and practice*. Chichester: Wiley.
- Moston, S. and Engelberg, T., 1993. Police questioning techniques in tape-recorded interviews with criminal suspects. *Policing and society*, 3, 223–237.
- Moston, S., Stephenson, G.M., and Williamson, T.M., 1992. The effects of case characteristics on suspect behaviour during police questioning. *British journal of criminology*, 32, 23–40.
- Muthén, L.K. and Muthén, B.O., 1998–2007. *Mplus user's guide*. Los Angeles, CA: Muthén & Muthén.
- Narchet, F., Meissner, C.A., and Russano, M.B., 2011. Modeling the influence of investigator bias on the elicitation of true and false confessions. *Law and human behavior*, 35, 452–465.
- Pearse, J. and Gudjonsson, G.H., 1999. Measuring influential police interviewing tactics: a factor analytic approach. *Legal and criminological psychology*, 4, 221–238.
- Pearse, J., et al., 1998. Police interviewing and psychological vulnerabilities: predicting the likelihood of a confession. *Journal of community and applied social psychology*, 8, 1–21.
- Preacher, K.J., Rucker, D.D., and Hayes, A.F., 2007. Addressing moderated mediation hypotheses: theory, methods and prescriptions. *Multivariate behavioral research*, 42, 185–227.
- Russano, M.B., et al., 2005. Investigating true and false confessions within a novel experimental paradigm. *Psychological science*, 16, 481–486.
- Schreiber, J.B., et al., 2006. Reporting structural equation modeling and confirmatory factor analysis results: a review. *The journal of educational research*, 99, 323–337.
- Skolnick, J.H. and Leo, R.A., 1992. The ethics of deceptive interrogation. *Criminal justice ethics*, 11, 3–12.
- Snijders, T.A.B. and Bosker, R.J., 1999. *Multilevel analysis. An introduction to basic and advanced multilevel modeling*. London: Sage.
- Soukara, S., Bull, R., and Vrij, A., 2002. Police detectives' aims regarding their interviews with suspects: any change at the turn of the millennium? *International journal of police science and management*, 4, 101–114.
- Soukara, S., et al., 2009. What really happens in police interviews of suspects? Tactics and confessions. *Psychology, crime and law*, 15, 493–506.
- Spohn, C.C., et al., 2014. The direct and indirect effects of offender drug Use on federal sentencing outcomes. *Journal of quantitative criminology*, 30, 549–576.
- Stevens, L. and Verhoeven, W.J., 2010. *Raadman bij politieverhoor. Invloed van voorafgaande consultatie en aanwezigheid van raadslieden op de organisatie en wijze van verhoren en de proceshouding van verdachten*. Den Haag: Boom Juridische Uitgevers.
- St-Yves, M. and Deslauriers-Varin, N., 2009. The psychology of suspects' decision-making during interrogation. In: R. Bull, T. Valentine, and T. Williamson, ed. *Handbook of psychology of investigative interviewing. Current developments and future directions*. West Sussex: Wiley-Blackwell, 1–15.
- Sullivan, Y.P., Vail, A.W., and Anderson, H.W., 2008. The case for recording police interrogation. *Litigation*, 34, 1–8.
- Verhoeven, W.J., 2014. Perspectives on changes in the right to legal assistance prior to and during police interrogation. *Erasmus law review*, 7 (4), 171–174.
- Verhoeven, W.J. and Stevens, L., 2012. The lawyer in the Dutch interrogation room: influence on police and suspect. *The journal of investigative psychology and offender profiling*, 9, 69–92.
- Verhoeven, W.J. and Stevens, L., 2013. *Rechtsbijstand bij politieverhoor. Evaluatie van de Aanwijzing rechtsbijstand bij politieverhoor in Amsterdam-Amstelland, Groningen, Haaglanden, Limburg-Zuid, Midden-en West-Brabant en Utrecht*. Den Haag: Boom Lemma uitgevers.
- Vrij, A., 2010. Het verhoren van verdachten. In: P.J. van Koppen, H. Merckelbach, M. Jelicic and J.W. de Keijser, ed. *Reizen met mijn rechter. Psychologie van het recht*. Deventer: Kluwer, 723–753.
- Vrij, A., Mann, S., and Fisher, R.P., 2006. Information-gathering vs accusatory interview style: individual differences in respondents' experiences. *Personality and individual differences*, 41, 589–599.
- Walsh, D. and Bull, R., 2012. How do interviewers attempt to overcome suspects' denials? *Psychiatry, psychology and law*, 19, 151–168.
- Walsh, D. and Bull, R., 2015. Interviewing suspects: examining the association between skills, questioning, evidence disclosure, and interview outcomes. *Psychology, crime & law*, 21, 661–680.
- Walsh, D., et al., ed., 2015. *International developments and practices in investigative interviewing and interrogation. Volume 2: suspects*. London: Routledge.
- Williamson, T.M., 1993. From interrogation to investigative interviewing: strategic trends in police questioning. *Journal of community and applied social psychology*, 3, 89–99.
- Williamson, T.M., Milne, B., and Savage, S.P., 2009. *International developments in investigative interviewing*. Cullompton: Willan Publishing.

## Appendix 1. Coding framework for interrogation techniques.

Interrogation techniques	Description
[P4] Confrontation with (circumstantial) evidence	This may concern: showing photographs, playing or reading fragments from telephone taps or MSN conversations, and discussing blood trails on clothes or walls.
[P5] Confrontation with statements of witnesses or other suspects	Interrogators refer to witness statements or statements made by other suspects. For example: 'They say the weapon is yours.' 'People say you did it.' 'You get it that people are pointing at you considerably. Your buddies are grassing on you, aren't they?!' 'Others say that you are involved somehow. We don't conjure it out of mid-air.' 'Your own girlfriend, even your own girlfriend saw the pictures and said it was you.' 'You do get it by now that we spoke with a lot of people who stated all sorts of things.'
[P6] Present hypothetical scenarios	Interrogators present possible ways of how things might have happened, hoping suspects go into it. Examples are: 'Suppose it's because you wanted something from the house or talk to someone then we get information about when it possibly happened.' 'Interrogator supposes that he doesn't want to say that the suspect wanted to kill the victim with the screwdriver but that he perhaps only wanted to stop him with it.' 'I don't know if the blood is from the victim, but if so, it's going to be hard.' 'If you are involved I would remain silent indeed, not if you are innocent.'
[P7] Leading questioning	The remarks and questions posed by the interrogator give the impression that the suspect is involved or knows something. Examples are: 'Are you afraid to tell it because it is incriminating?' 'You don't like someone. Then it's nice that the problem is solved now, isn't it?' 'Now the girl is dead so problem solved.' 'If you have nothing to do with it, why use your right to silence? You can't give wrong answers, can you?' 'Would the victim be seeing a stranger at midnight?' 'Because of everything, all you have been through, you want to hurt someone too.'
[P8] Make promises	'If you give good information and specifically about who is responsible for what, than we can do something with it.' 'Then something will happen, if your information is true.'
[P9] Moral appeal	Interrogators trifle with suspect's feelings of guilt and his conscience. In most cases they refer to suspect's parents, spouse, children, or friends. Examples are: 'It concerns others as well. You are making it very easy for yourself now. Your mother, your girlfriend, your child. How will it affect them?' 'If you are close to your mother, your mother wouldn't say all these things if her son didn't do anything.' 'Your wife didn't sleep for one moment. You don't give that a moment's thought.' 'Who will read to the child now?'
[P11] Give moral justifications	'I think that it is a mugging gone wrong. This wasn't supposed to happen.'
[P12] Challenge inconsistencies in suspect's statement	This concerns suspects being inconsistent during the questioning. Interrogators use this in an attempt to corner suspects. Examples are: 'First you say you are drunk and that you don't know it anymore because of that. And now you say that you know for sure that you were with [name victim].' 'So, there hasn't been a bed in that room ever? Why do you say it differently every time?' 'You are inconsistent. You want the offender being caught, but you won't cooperate.' 'Ah! So they did tell you!' 'You have been lying from the beginning. You are not open and you are dishonest. It is about time you start telling the truth.' 'All the time, you adjust your story! What should I believe?'
[P13] Interrupt suspect's statement	Sometimes interrogator and suspect interrupt each other. Furthermore, interrogators don't let suspects finish by interrupting them in several ways: 'Wait, this is important.' 'Yes okay, so nothing special.' 'Clear. We are going to put your story on paper now.' '[...] we know all about those financial problems now. I don't think that is the most important part.'
[P14] Show impatience, frustration, and anger	Interrogators raise their voices as well. Examples are: 'I am not dealing with a small child, am I?!' 'At least, you can say why not?!' 'Around 7pm the interrogator yells out again ...' '... shouts that she and the suspect are not retarded ...' 'You are here for murder! You are disrespectful and detached! Unbelievable!' Interrogators also show their frustration by sighing repeatedly.

(Continued)

**Appendix 1.** Continued.

Interrogation techniques	Description
[P15] Stress consequences of non-cooperation	Interrogators often refer to what the judge will think. For instance: 'What will the judge say about this?' 'It is strange that you won't state where you are from, isn't it? Not even where you were born. I think you need to keep your credibility. In this way you will lose it.' 'Experience shows that silence does not work in your favour.' 'The judge doesn't have time to talk to you. You can tell it here so the judge can read it.' 'Because you are silent you don't put any effort into proving your innocence and you don't cooperate in finding the truth.' 'Do you realize that you don't prove your innocence by keeping silent? That you frustrate finding the truth?' 'As a consequence of that I will advise to prolong your stay here.' 'A judge can also watch this footage. What will he think of it?' 'The examining judge also isn't retarded. He will also wonder why you haven't said anything until then.'
[P16] Physical intimidation	This concerns specifically physical movements towards the suspect. Examples are: 'The interrogator gets up, takes the photo album, moves towards the suspect, and stands beside him. He opens the album on a page with a picture of the suspect. He raises his voice and points at the picture using a lot of gestures.' 'When the interrogator reconstructs the situation he attempts to persuade the suspect to tell more about what happened. Meanwhile the interrogator walks up and down the questioning room.'

**Appendix 2. Structural model of interrogation techniques, statement at the start of the interview, changing statement, and presence of a lawyer.**

	Basic model ( <i>n</i> = 168)								
	Manipulative techniques			Confrontational techniques			Changing statement		
	<i>b</i>	(SE)	$\beta$	<i>b</i>	(SE)	$\beta$	<i>b</i>	(SE)	$\beta$
Silent	.431*	(.120)	.275	.129	(.162)	.085	−2.119*	(.273)	−.742
Statement offence/confess	.098	(.144)	.048	.299 <sup>#</sup>	(.151)	.153	−1.035*	(.251)	−.281
Manipulative techniques	–			–			.091	(.153)	.050
Confrontational techniques	–			–			.394 <sup>#</sup>	(.198)	.208
Model fit									
CFI	.983								
RMSEA	.037								
	Group: no lawyer present ( <i>n</i> = 50)								
	Manipulative techniques			Confrontational techniques			Changing statement		
	<i>b</i>	(SE)	$\beta$	<i>b</i>	(SE)	$\beta$	<i>b</i>	(SE)	$\beta$
	Silent	1.092*	(.301)	.465	.370	(.361)	.183	−2.481*	(.581)
Statement offence/confess	.370	(.291)	.163	.326	(.304)	.167	−0.952*	(.311)	−.327
Manipulative techniques	–			–			.467*	(.126)	.364
Confrontational techniques	–			–			.525*	(.186)	.352
	Group: lawyer present ( <i>n</i> = 118)								
	Manipulative techniques			Confrontational techniques			Changing statement		
	<i>b</i>	(SE)	$\beta$	<i>b</i>	(SE)	$\beta$	<i>b</i>	(SE)	$\beta$
	Silent	.313 <sup>#</sup>	(.126)	.249	.134	(.182)	.102	−2.106*	(.323)
Statement offence/confess	−.101	(.176)	−.056	.251	(.156)	.134	−1.216*	(.365)	−.295
Manipulative techniques	–			–			−.291	(.383)	−.127
Confrontational techniques	–			–			.355	(.295)	.162
Model fit									
CFI	.980								
RMSEA	.039								

Notes: The models control for the correlations between manipulative techniques and confrontational techniques, between duration of questioning, manipulative and confrontational techniques, and changing statement, and between first questioning and manipulative and confrontational techniques.

CFI, comparative fit index; RMSEA, root mean square error of approximation; SE, standard error.

<sup>†</sup>*p* < .10; <sup>#</sup>*p* < .05; \**p* < .01 (two-tailed).