

Cooperation, reminiscence and repeated interviews
of suspects



A thesis submitted for the degree of Masters by Research

by

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August, 2016

Declaration

Candidate's declarations:

I, Leah Scott, hereby certify that this thesis submitted in partial fulfilment of the requirements for the award of, Master by Research in Abertay University, is wholly my own work unless otherwise referenced or acknowledged. This work has not been submitted for any other qualification at any other academic institution.

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Date.....

Supervisor's declaration:

I, Christopher Watkins, hereby certify that the candidate has fulfilled the conditions of the Resolution and Regulations appropriate for the degree of Master by Research in Abertay University and that the candidate is qualified to submit this thesis in application for that degree.

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Certificate of Approval

I certify that this is a true and accurate version of the thesis approved by the examiners, and that all relevant ordinance regulations have been fulfilled.

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Acknowledgements

Firstly I would like to thank my supervisors Christopher Watkins and David La Rooy for all of their help and ideas. I would also like to thank my mother Linda, my brothers Jacob and Micah and my grandparents Ray and Nevin for always being there for me. I would also like to thank my best friends Emma, Keri and Gillian for making me laugh with their ridiculous stories. Special thanks to Cait and Fionn for providing me with my weekly subway sessions and gossip updates. Last but certainly not least I would like to thank my boyfriend Paul for putting up with me throughout my degree and always making me smile.

Abstract

Previous research on police interviews with victims/witnesses of crime suggests that an initial interview does not represent a full version of events, with new, previously un-recalled information given in subsequent interviews (reminiscence), especially when open-ended prompts are used to promote free recall. Suspects of crime may have different motivations to victims/witnesses such as the motivation to deceive. Research on suspect interviewing tends to focus on how officers can detect deception during interviews and factors which may increase the risk of false confessions (reviewed in Chapter 2 along with current protocols for interviewing suspects). A case study of the repeated testimony of a real life suspect of murder (Chapter 3) showed that a substantial amount of information given by the suspect in the second and third recall attempts was new information (i.e. reminiscence). Additionally, despite their low usage, invitations yielded nearly four times the average response length from the suspect compared to other question types. This work suggests that similar social and memory processes may be involved when conducting repeated interviews of victims/witnesses of crime and suspects to crime, at least when those suspects are cooperative. An experiment then examined the use of a subtle prime to being watched in order to increase cooperation when individuals write about a prior moral transgression (Chapter 4). The presence of a web camera lead to more information reported and more words written (across both sessions) and greater reminiscence (proportion of new information) approximately one day later. These findings suggest early evidence, at least in the laboratory, that suspect cooperation may be increased when cues to being watched are present. Directions for future research are discussed and findings are interpreted in light of previous research on suspect interviewing (Chapter 5).

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Chapter 1 : Directions and aims of research programme

The aim of this thesis is to examine the psychological and social dynamics of police interviews of suspects of crime, focussing specifically on repeated interviews of suspects of crime. The thesis is grounded in a literature on repeated forensic interviews and the evidence-based best-practice guidelines for multiple interviews of the same person, derived from our understanding of psychological phenomena related to memory, social influence and/or suggestibility. A broad historical overview is provided in Chapter 2 of other phenomena that have shaped current debates on suspect interviews in both European and North American jurisdictions, such as research on deception detection in suspects and false confessions from suspects. Specifically, this thesis develops existing research on reminiscence, the phenomena where previously unrecalled information is provided in second and third recall attempts at later interviews. While previous research has focussed on reminiscence in eyewitnesses and victims of crime, the first goal of this research is to examine whether, similar to eyewitnesses and victims, suspects provide more information over repeated interviews and provide more information in response to certain types of interviewer questions than others.

To test this first research question (Chapter 3), the first case study (to knowledge) of a repeated interview of a real suspect of crime was conducted. This study suggests that cooperative suspects appear to behave similarly to victims and witnesses during repeated interviews, when examining the memory processes involved in these repeated interviews and responses to social interaction with the interviewer (i.e. responses to different lines of enquiry/question types).

As suspects will naturally differ in their cooperativeness with the investigative interviewer (e.g. due to motives to deceive or conceal guilt), this motivated the direction of the final study (Chapter 4). Given potential ethical, practical and logistical considerations of conducting lab-based research on the phenomena of interest (i.e. responses to a wrongdoing over multiple interviews), the goal of the final study was to examine whether the presence of subtle cues in the laboratory, that have been known to enhance cooperation (the 'watching eyes

effect'), enhance reminiscence when a convenience sample of participants provide a written account of a minor moral transgression over repeated attempts. Here, greater reminiscence (the presence of new, non-contradictory information in session two) is consistent with an account of a 'cooperative suspect', in light of theoretical approaches which associate greater consistency over time with deception during suspect testimony (i.e. providing the same information over repeated sessions). These initial experimental findings suggest that suspects may be more cooperative when cues that enhance cooperation are involved either at interview or at the scene of the crime (e.g. CCTV), although further field work is necessary to examine these claims.

As discussed in Chapter 5, the findings of Chapter's 3 and 4 can motivate further research into suspect testimony over repeated attempts and may be of use when complemented by further field work that examines situations where cooperation may be more or less likely.

Chapter 2 : Experimental and field research on suspect interviewing: Suspect and interviewer factors and forensic outcomes

Suspect interviewing: Historical context

During a police investigation, the events recalled during interviews with victims, witnesses and suspects are often used as evidence in the case, making it important to understand the processes that underlie these interactions and what factors may affect the outcome. While it is important to make sure victims of crime are granted justice by perpetrators being punished, it is also important to make sure that suspects in criminal investigations are treated fairly and given a chance to recall the event in as much detail as possible. Due to the importance of police interviews in criminal investigations, there has been a large amount of research into the underlying processes involved in recalling a crime to the police. Before reviewing literature on this subject, it is necessary to consider the historical context in which this research has taken place and the events that have led to the interest in this subject.

In the past, interrogations of suspects have sometimes involved coercion and violence in order to obtain a confession (Leo, 1996; see Leo, 2004 for a review). Over the last 50 years there has been a change in attitude toward police interviewing in the UK, partly due to a number of miscarriages of justice that have received media attention, with innocent suspects wrongfully convicted, often with the interview process a main contributing factor (e.g. see Poyser & Milne, 2011 for further discussion). With the onset of DNA profiling to aid criminal investigations in the mid 1980's, a number of wrongfully convicted suspects were released, marking a turnaround in public perception of the frequency of injustices (see Bohm, 2005; Gudjonsson & Pearse, 2011; Kassin & Gudjonsson, 2004 for discussion). This not only led to increased scrutiny on the police but also an increase in research on the dynamics of investigative interviews (see Bull, 2014 for further discussion).

Although public concern about injustices were raised by a variety of factors and cases, one case in particular seemed to point the blame primarily at the investigative process and the publicity that this case received consequently led to a number of key changes in the UK legal system (see Poyser & Milne, 2011 for further discussion). In 1972 a young man named Maxwell Confait was killed in London and three boys were wrongfully convicted of his murder. All of the boys falsely confessed to the crime and the convictions were later quashed after further investigation. The media attention surrounding this injustice led to a public inquiry (Fisher, 1977), which concluded that there were major flaws in the interview process and that all of the youths had psychological vulnerabilities. The Fisher report (1977), in part, led to the Royal Commission on Criminal Procedure (1981) which commissioned research into the working practices of the police. In the section on police interviews, it was concluded that police assume the guilt of the suspect too readily and that they use the interview process primarily as a means to obtain a confession, with other lines of evidence avoided after obtaining a confession (Softley, 1981). In response to the Royal Commission on Criminal Procedure, the government enacted the Police and Criminal Evidence Act (PACE, 1984) which included a detailed framework for police practice and suspect's rights, and rules for police questioning. The section most pertinent to the current purposes, section 66, states that all suspect interviews are to be recorded electronically. This section also details whether confessions are admissible when obtained under circumstances of pressure. There is also a section detailing special practices regarding youths and adults with psychological vulnerabilities, specifically, the incorporation of an adult who can act to advise the interviewee during questioning (an appropriate adult) in such cases.

The effects of the PACE Act saw a number of changes in the way that suspects were detained and questioned, with less persuasive questioning and tactics used by police and initial concern about fewer confessions found to be misguided (Moston & Stephenson, 1993). However, despite these apparent changes, some problems persisted, with post-PACE research showing that the police still use suspect interviews primarily as a tool to gain a confession and readily assume guilt, with undue pressure used in several cases (Baldwin, 1992; Stephenson & Moston, 1994; see Gudjonsson, 1994 for further discussion). While PACE had brought about a level of transparency with the introduction of

video-taped interviews (although see Stephenson & Moston, 1994 for a discussion on the questioning of suspects outside of the police station), there were still problems relating to the general attitude of police officers toward suspect interviews. More media attention and public concern rose in the early 90's due to a fresh set of miscarriages of justice (see Poyser and Milne, 2011) which led to the creation of the PEACE interviewing model (discussed later in this chapter), with police aiming to train all officers in the UK in this method.

While the reaction to miscarriages of justice in the UK has been to change legislation and provide new interview training and protocol in response to research, the reaction has been quite different in the USA (e.g. see Dixon, 2010; Gudjonsson and Pearse, 2011 for further discussion). In the USA, the most widely used suspect interviewing technique is specifically aimed at reducing a suspect's resistance in order to gain a confession (the Reid Technique; Inbau et al., 2011). Training in this method involves attempting to detect cues to deception and using a number of strategies in order to maximise the benefits of confessing to the crime. These methods are not exclusive to American officers however as officers in the UK may also use some tactics that are part of the Reid Technique (Pearse & Gudjonsson, 1999). As with the UK, the onset of DNA profiling saw a number of wrongfully convicted inmates released in the USA and in 1992 in New York a number of lawyers set up the Innocence project, where lawyers provide services to inmates who are seeking to get their convictions quashed on the grounds of new DNA evidence. There are now more than 40 innocence projects across the USA. Here, some of the primary reasons for contacting these services include a prior false confession, misidentification from an eyewitness and/or alleged misconduct by police (see Bohm, 2005 for further discussion).

Although this thesis is concerned primarily with suspect interviews, it is important to look briefly at the history of police interviews of victims and witnesses of crime, as this can give insight into the underlying cognitive processes that are at play when recalling a life event and what factors may affect this. In the 70's Elizabeth Loftus carried out research on what she called the 'misinformation effect' where eyewitness memory is 'contaminated' by information that the person receives after the actual event (Loftus & Palmer, 1974), leading to details incorporated in interviews which did not actually happen in the event. This led to interest on the effects of suggestion on human memory (see Ridley, Gabbert

& La Rooy, 2013 for further discussion). This rise in research on suggestibility was motivated in part by a number of high-profile American cases in the 1980s of mass allegations by children of sexual abuse, such as the McMartin preschool and Kelly Michaels day care abuse cases (see Schrieber et al., 2006). Research resulting from the apparent suggestibility of children and incorporation of false details into accounts suggests that different question types can affect rates of suggestibility, with leading questions increasing rates of misinformation. By contrast, open-ended prompts, which promote free recall from the interviewee, reduce rates of misinformation (see Ceci & Bruck, 1993 for a review; also see Ridley et al., 2013 for further discussion). Modern protocols for interviewing vulnerable witnesses, such as the NICHD protocol (Lamb et al., 2007; Lamb et al., 2011), advocate the use of open-ended prompts in order to promote free recall and gain as much correct information as possible. Due to the nature of police investigations, children who are alleging abuse are often interviewed on more than one occasion, however there has been concern about repeated interviews with children as it was thought that there would be more chance of misinformation being incorporated into later interviews (Ceci et al., 1994). However, research on the repeated interviewing of children revealed that the first interview did not reflect a full statement of events and that as long as appropriate open-ended questions were asked, repeated interviews with children could lead to more new, previously un-recalled information being incorporated in subsequent interviews, a phenomenon known as reminiscence (e.g., Hope et al., 2014; La Rooy et al. 2005; La Rooy et al., 2010; Odinet et al., 2013; Orbach et al., 2011). Changes have been made in the way that witnesses, and in particular vulnerable witnesses, are interviewed, in response to research which shows that although caution must be taken in relation to certain question types, a series of non-suggestive interviews can lead to a high amount of relevant information being given to the police which can aid their investigation.

As can be seen, the last 50 years has seen a number of changes in the way that the police interview victims, witnesses and suspects alike due to a number of high profile miscarriages of justice and subsequent concern over police practice. This has led to a surge of research in investigative interviewing and the factors that affect the outcome of such interviews, which in turn has led to new legislation and new best-practice protocols for interviews. This chapter is a review

and synthesis of the literature concerning suspect interviewing. Current protocols in the UK and USA and their effectiveness will be reviewed, as well as factors that affect true and false confessions. Research pertaining to indicators of deception and the ability to detect deception will also be discussed. Finally, the outcomes of suspect interviews in light of interviewer factors, such as the use of aggression and empathy, and of interviewee factors, such as psychological vulnerabilities in youths and the type of crime that has been committed, will be discussed.

Suspect interviewing: Current protocols

Current protocols for interviewing suspects of crime tend to fit into one of two broad categories; information gathering or accusatory. The information gathering approaches aim to question the suspect in a manner designed to elicit high amounts of event-relevant details from the suspect. This approach is underpinned by research on human memory whereas the accusatory style interview focusses more on gaining a confession from the suspect and is framed by the ability of the interviewer to break down the resistance of the suspect and detect any attempts at deception. Although these approaches can overlap (Pearse & Gudjonsson, 1999), the information gathering approaches are generally used across Europe whereas the accusatory style approaches are used more in the USA (e.g. see Dixon, 2010 for further discussion). The two main interviewing protocols of these categories (PEACE for information gathering and the Reid Technique for accusatory) will be described as well as the background for these approaches and any accompanying interview protocol types (the Cognitive Interview for PEACE and the Behavioural Analysis Interview [BAI] for the Reid technique).

The accusatory approach.

The most widely used approach to the investigative interviewing of suspects in North America is that offered by the U.S firm John E. Reid and associates (see, Dixon, 2010 for a review; see also King & Snook, 2009; Masip & Herrero, 2012 for further discussion). It is known as the Reid technique and was first published in 1962 as a guide for investigators for interrogating suspects. It is now in its fourth

edition (Inbau et al., 2011). Because the accusation of guilt is inherent in this technique, it is considered an accusatory style of interview (see Blair, 2005; Meissner & Kassin, 2002 for further discussion).

The primary assumption of the Reid technique is that a suspect who is guilty of a crime will resist confessing and must therefore be exposed to various techniques which will break down their resistance and ultimately persuade them to confess (Inbau et al., 2011). It is therefore necessary to be sure of the suspect's guilt prior to the onset of this approach. This is addressed with a preliminary interview named the Behavioural Analysis Interview (BAI). Some of the behavioural indicators in the BAI are included in Table 2.1. The BAI involves asking the suspect a set of questions, which are relevant to any crime. Questions are designed to evoke certain behaviours in the suspect, which are assessed against a list of behavioural indicators to deceit (Masip & Herrero, 2012; Masip et al., 2011). If the interviewer is sure of the suspect's guilt based on their behaviour during the BAI then they will proceed to interrogate them. This means that in the absence of any physical evidence or eyewitness reports, it is assumed that the investigator's ability to detect deceit is sufficient to distinguish between guilt and innocence (see Hill & Memon, 2007; Kassin & Fong, 1999 for further discussion). If the investigator is confident of a suspect's guilt and they continue to deny involvement in the crime, this continued resistance is often interpreted as further confirmation of their guilt (see Beune, Giebels & Taylor, 2010 for further discussion).

Table 2.1 BAI verbal and non-verbal indicators

	Guilty	Innocent
Verbal responses	<ul style="list-style-type: none">• Naïve/evasive• Delayed response• Geographical/emotional distancing from the crime• Resistance to name anyone• Negative attitude• Reluctance to speculate about motives	<ul style="list-style-type: none">• Direct answer• Immediate denial• Sounds sincere• Imitation of suspicion at who the suspect might be• Apology for any initial denial
Non-verbal responses	<ul style="list-style-type: none">• Crossing legs• Shifting• Grooming	<ul style="list-style-type: none">• Direct eye contact• Forward lean

Once the probable guilt of the suspect is established, they are interrogated, in which the focus shifts from analysing the suspect's behaviour to persuading them to confess using a nine-step procedure (see Table 2.2). Although these steps appear sequential, they can be used in any sequence (King & Snook, 2009). In addition to these nine steps, the Reid technique advocates the use of numerous other general guidelines, for example using a plain room with no decoration to minimise distraction (see King & Snook, 2009 for a description of additional guidelines of the Reid technique).

Table 2.2 Reid technique steps

1) Confrontation	The suspect is directly confronted with a statement indicating the interrogator's belief in their guilt.
2) Theme	Interrogators should make a distinction between emotional offenders (express shame/guilt) and non-emotional offenders. A theme for the interview should be developed depending on what type of offender the suspect is. For example, a moral justification for the crime should be used for emotional offenders. Different themes can be attempted depending on the suspect's reaction.
3) Denials	Always try to discourage denials as an initial denial will make it harder to gain a confession later on. Continuously reconfirm the interrogators belief in the suspect's guilt.
4) Objections	Objections to why the suspect could not have committed the crime are presumed to be only made by guilty suspects. Go through the theme again (step 2) in response to objections.
5) Attention	Guilty suspects may withdraw from the interrogator and start to ignore them in response to having their denials ignored and objections turned around. The interrogator must attempt to maintain the suspect's attention (e.g. by increasing physical proximity).
6) Mood	The suspect may appear depressed or dejected. This is when the interrogator should use sympathy and continue to maximise the benefits of confessing. This should continue until there are signs that the suspect is considering confessing.
7) Alternative question	Present the suspect with a choice between two explanations for committing the crime; one which puts the suspect in a better light than the other – but both involving admission.
8) Oral admission	After the suspect admits to some or all aspects of the crime the interrogator must show signs of relief and maintain rapport in order to draw the suspect into describing the full crime.
9) Written confession	The interrogator must aim to get any oral admission into a full written confession as this minimises the possibility of the suspect retracting their admission.

This procedure starts with a direct accusation of the suspect's guilt and follows on to convince the suspect of the benefits of confessing to the crime. Techniques of this sort are known as maximisation tactics as they focus on maximising the benefits of confessing and convince the suspect that there is solid evidence against them (Narchet et al., 2011; see also Kassin et al., 2010 for further

discussion). Minimisation tactics are also used, in which the perceived severity of the crime is minimised (Gudjonsson et al., 2006). The investigator offers sympathy and provides suspects with moral excuses for having committed the crime (e.g. see Hill & Memon, 2007 for further discussion). This often entails real or fabricated promises of leniency in return for a confession (Inbau et al., 2011; see Russano et al., 2005 for further discussion). Investigators trained in the Reid technique are also instructed to strongly refute or ignore denials and appeal to the suspect's conscience. Sometimes suspects are presented with an alternative question in which they have two options. One answer option makes the suspect appear guiltier or more socially unacceptable than the other but both options are incriminating. If the suspect provides a partial or full verbal confession the investigator is advised to obtain a written version of this as soon as possible in order to reduce the likelihood of the suspects reneging on this confession after reflection (Inbau et al., 2011; see Hill & Memon, 2007 for discussion). False evidence is also often used as well (Inbau et al., 2011; see Redlich & Goodman, 2003 for further discussion), for example saying that an eyewitness viewed the suspect when they did not. This is despite research indicating that the presentation of false evidence is associated with more false confessions (Kassin & Kiechel, 1996; Redlich & Goodman, 2003).

The information gathering approach.

In 1992 the UK Home Office was involved in establishing the PEACE model of investigative interviewing (Bull, 2014; Clarke & Milne, 2001; Poyser & Milne 2011). This was an endeavour to develop a more ethical and effective method of interviewing and minimise some of the risks inherent with past methods (i.e. false confessions) while maximising the amount of information gained from an interview. Officers in the UK are now given a five-day training course in this interview model (Clarke & Milne, 2001). PEACE is an acronym that reflects the five stages of the protocol (see Table 2.3).

Table 2.3 PEACE stages

P	<u>Planning and preparation</u> Stresses the importance of gathering information about the case prior to the interview and creating a detailed plan of what the investigator wants to achieve from the interview
E	<u>Engage and explain</u> Describes how the interviewer should discuss the purpose of the interview and start to build rapport with the interviewee
A	<u>Account</u> Refers to the elicitation of the suspect's account of the event using certain questioning strategies
C	<u>Closure</u> Emphasises the importance of maintaining rapport while bringing the interview to an end in an appropriate fashion
E	<u>Evaluate</u> Sets out how the interviewer should review what has been accomplished during the interview and work out any additional information that may be needed

This model highlights the importance of maintaining rapport with the suspect throughout the process and puts focus on the skills of the interviewer. It also aims to increase the amount of case relevant information that is gathered. The latter objective has led to the PEACE model referred to as an information-gathering form of interview. PEACE is intended to provide a basic structure for any type of interview situation with the addition of the use of the Cognitive Interview or Conversation Management in order to obtain the most detailed account possible (Clarke & Milne, 2001). Conversation Management (Shepherd, 1993) has three phases. In the first phase, the suspect agenda, the interviewer asks an open question and allows the suspect to talk for as long as they want on the topic without interruption. The interviewer then moves onto the second phase, the police agenda, in which the interviewer aims to gain as much detail about the suspect's account as possible and clarify any points. The third phase, challenge, involves the interviewer exploring any inconsistencies between the suspect's account and any other available evidence (see Roberts, 2012 for a discussion on the phases of Conversation Management).

Another protocol for investigative interviewing which uses an information-gathering approach, sometimes used in conjunction with PEACE, is the Cognitive Interview. Although primarily used with victims and witnesses, the Cognitive Interview has also been used in suspect interviews (see Geiselman, 2012 for

further discussion) and there have been recent attempts to use the stages in this protocol in order to detect deception in suspect interviews (Geiselman, 2012). In 1984 Edward Geiselman and Ron Fisher developed the Cognitive Interview (Geiselman et al., 1984) as a method for improving the amount of accurate information retrieved and raising the standard of interviews with victims and witnesses of crime (see Memon, Meissner & Fraser, 2010 for a review). This method consists of a series of steps aimed at enhancing the interviewee's memory of a crime and has received much empirical attention. The procedure for the Cognitive Interview consists of four retrieval mnemonics (Geiselman et al., 1985) which are described in Table 2.4.

Research typically finds a 25-40% increase in the amount of relevant information obtained when compared to other interview techniques and has been widely adopted by law enforcement (Geiselman, 2012; Memon et al., 2010).

Table 2.4 Cognitive Interview mnemonics

Context	Mentally reinstating the context of the event by considering emotions and physical states felt at the time as well as aspects of the environment (i.e. the weather).
Recollection	Reporting every detail that can be remembered (sometimes repeatedly) regardless of its perceived importance.
Variety	Recount events in different chronological order in order to see if new details emerge.
Perspective	Consider the event from a different perspective for example as another person or focusing on a different sense (i.e. from audio to visual).

Comparing the efficacy of different interview protocols

Accusatory

Despite the prominence of the Reid technique and the BAI in North American policing there has been surprisingly little research conducted on the processes involved and their effectiveness (Dixon, 2010; King & Snook, 2009). It is worth noting that although mainly used across North America, some of the minimisation and maximisation techniques inherent in the Reid technique are occasionally

used in the UK (Gudjonsson & Pearse, 2011; Pearse & Gudjonsson 1999). The authors of the Reid technique and its advocates claim that the main benefit of the technique is the effectiveness of the steps used to obtain a confession from suspects who initially deny the allegations put to them (Inbau et al., 2011; see Blair, 2005 for further discussion). Although confession rates may seem high in interviews containing some or all of the steps of the Reid technique (e.g. King & Snook, 2009, found a higher confession rate from interviews that employed more of the steps), the authors claims of an 80% confession rate have yet to be scientifically verified (see Gudjonsson & Pearse, 2011 for further discussion). Even if these claims are true and the Reid technique increases the chances of the police gaining a confession from an uncooperative suspect, concern has been raised about the admissibility of these confessions in light of some of the potentially coercive techniques used to obtain them (e.g. see Gudjonsson & Pearse, 2011; see also Kassin & Gudjonsson, 2004 for review of suspects' motives to confess).

In order to assess whether the Reid technique is coercive it is first necessary to define what is deemed to be a coercive tactic. Although definitions vary across cultures and throughout history (Leo, 1996), broadly speaking a coercive tactic is one which purposefully aims to intimidate or manipulate the suspect into complying with a demand (i.e. confessing to the crime). Although some minimisation and maximisation tactics could be perceived as being 'understanding' (i.e. the interviewer minimising the severity of the crime in order to empathise with the suspect), these techniques could also be interpreted as coercive (see Kebbell et al., 2010 for further discussion). Leo (1996) carried out a field study in which he examined 182 interrogations in the USA. The interrogator behaviours that were categorised as coercive included, for example, questioning the suspect in an unrelenting or badgering style or promising leniency in return for cooperation. These two actions are intrinsic to the Reid technique (e.g. see Dixon, 2010 for a review and Russanno et al., 2005 for further discussion), which suggests that it is coercive by its very nature.

This concern has been shown in research, for example, King and Snook (2009) found that 9% of interviews used at least one coercive strategy as defined by Leo (1996). Pearse and Gudjonsson (1999) assessed 18 real police interviews with suspects in the UK where the suspects initially denied the allegations put to

them and subsequently confessed after being interviewed. They found that in some of the cases the police officers used a range of minimisation and maximisation techniques including intimidating the suspect and psychologically manipulating the suspect by distorting the strength of the evidence against them. In assessing the final outcomes of the cases, a clear positive relationship emerged between the use of overbearing tactics and the likelihood of the case being found inadmissible in court due to police misconduct. It is also worth noting that in two of the cases more sensitive tactics were used (i.e. appealing to the suspect) and both of these cases resulted in a conviction. This work suggests that although the tactics of the Reid technique may result in a confession from an initially uncooperative suspect, this may come at the cost of the courts viewing the interview evidence as inadmissible. The sample used in this study is very small and is based in the UK so does not focus on the effects of the Reid technique in the setting where it is used most, however in the absence of any large scale field studies in North America it sheds light on the real implications of following the protocols of the Reid technique.

As well as the minimisation and maximisation techniques which are involved in the steps of the Reid technique, there has been some debate about whether the BAI indicators are reliable for detecting deception and determining the guilt of a suspect (e.g. see Masip et al., 2011). The official website of John E. Reid and associates states (retrieved from https://www.reid.com/services/r_behavior.html, 3/08/2016):

“...interviewers specifically trained and experienced in behavior analysis assessment can correctly identify the truthfulness of a person 85% of the time.”

This claim is based on a single published study with limited data (see Kassin, 2008 for further discussion). In this study, Jayne et al. (1994) edited 60 interview tapes from the Reid company's collection and showed them to four staff members of the company. The veracity of these interviews was established primarily on the grounds of whether or not the suspect confessed. No comparison group of untrained assessors was used. From the judgements of these four staff members, the authors concluded that BAI is a highly accurate method for determining suspect guilt.

Despite this claim, there is a contrast between the behavioural indicators of deceit in the BAI and lie detection research (Masip et al., 2011; Masip & Herrero, 2012; see also DePaulo et al., 2003 for a meta-analytic review). In terms of the research on trainees' ability to determine guilt, naïve participants who are not trained in BAI measures naturally use some of the BAI indicators (Masip et al., 2011), leading to the suggestion that the BAI indicators are not scientifically based but are instead based on common sense notions (e.g. see Masip & Herrero, 2012; Dixon, 2010 for further discussion). There are some conflicting results in the literature regarding the effects of training. For example, Blair and McCamey (2002) found that trained participants are better at judging the guilt of suspects than naïve participants whereas Kassin and Fong (1999) found that naïve participants are better at judging guilt than trained participants. Both of these studies, however, suggest that trained participants have more confidence in their judgements (Blair & McCamey, 2002; Kassin & Fong, 1999). In terms of research on the behaviours exhibited by suspects during a BAI, in contrast to the recommendations of BAI, lying suspects are *more* likely to be helpful toward the interviewer and appear more relaxed than truth tellers in terms of non-verbal indicators they use (e.g., they are less likely to shift posture or avert gaze; Vrij et al., 2006a). This finding can be explained by considering that liars often control their behaviour to appear truthful, which in light of the suggestion that the BAI indicators are common sense, means that a lying suspect could alter his/her behaviour resulting in the interviewer concluding that they are truthful (Masip & Herrero, 2012; Vrij et al., 2006a). In addition to this, Vrij et al. (2007) showed participants videos of different styles of interviews (including accusatory and information gathering) and found that despite the accusatory interview style resulting in suspects showing fewer verbal signs of deceit, participants who judged these interviews were more likely to falsely assume the guilt of the suspects in the video. This suggests that an accusatory style of interviewing makes suspects appear guiltier than they may be.

It can be seen from the literature that despite its wide spread use throughout North America (and indeed across the world), the Reid technique is not always seen favourably in the literature on suspect interviewing. Although there is some tentative evidence which suggests that it may result in a higher number of confessions from initially uncooperative suspects, the admissibility of

these confessions is in question in light of some strategies which could be deemed as coercive. In addition to this, the BAI's ability to distinguish the guilt or deception of a suspect is questionable. The research in this area portrays that an innocent suspect who is falsely accused of a crime could be deemed as being deceptive and guilty based on the evaluation of false, common sense notions about what behaviour a lying suspect would display. This in turn could then lead to an overbearing, suggestive and manipulative interview geared toward breaking down the suspect's resistance and gaining a confession. There is evidence that (in the UK at least) this scenario would most likely lead to the case being inadmissible in court, however a lack of field studies in the US mean that this claim cannot be supported.

Despite the widespread use of the Reid technique in North America, in recent years there has been a change in attitude toward interrogation in the USA. One reason this change in attitude has arisen is due to efforts to find the best way to extract as much information as possible from terrorist suspects. In 2009, the US government formed the High-Value Detainee Interrogation Group (HIG) which funded research in investigative interviewing in an attempt to find the best way of gaining information from terrorist suspects (the proposal for this research can be viewed on the Public Intelligence website – retrieved from <https://publicintelligence.net/fbi-high-value-detainee-interrogation-group-advance-the-science-of-interrogation-contract-announcement/> - 18/1/17). Some of the resulting research clearly points towards the importance of establishing rapport and creating a positive atmosphere in order to gain as much information as possible (see e.g. Alison et al. 2013; Evans et al. 2014). Additionally, some research has specifically shown that an information gathering approach leads to more relevant details obtained than an accusatorial approach (Evans et al. 2013). Based on such research, the HIG's most recent annual report states:

'an effective interrogation requires an individualized, flexible, rapport-based, and information-gathering approach' – (HIG report, 2016)

In addition to the research funded by the HIG, there has also been some scrutiny over the Reid Technique specifically. In 2015, a man successfully sued John E. Reid and associates following his release from a 20 year sentence after

he falsely confessed to murder during interrogation based on the Reid Technique (The New Yorker, 18/1/17, <http://www.newyorker.com/news/news-desk/juan-rivera-and-the-dangers-of-coercive-interrogation>). Due to these recent shifts in attitude, an information-gathering approach is now advised in North American police stations (see e.g. Snook et al. 2014 for further discussion) and there has been an effort to introduce PEACE protocol to the USA with the Forensic Interview Solutions' (FIS) website now offering PEACE training in America (FIS, 18/1/17, <http://www.fis-international.com/assets/Uploads/Introducing-P.E.A.C.E.-to-America.pdf>).

Information gathering

As mentioned previously, research on the interviewing of victims and witnesses recommends the use of open-ended questions in order to gain as much information as possible from the interviewee (e.g. Lamb et al., 2007; Lamb et al., 2011). Evidence suggests that this advice has not always been adopted in relation to suspect interviewing with research showing that open-ended questions are used the least out of all question types in real life suspect interviews (Snook et al., 2012). This is despite other research finding that obtaining verbal evidence such as confessions, is primarily due to the use of open-ended questions and that too many closed questions damages rapport (Read & Powell, 2011). With this in mind, information gathering approaches to interviewing suspects (such as the PEACE model), which have a clear focus on using open-ended questions to elicit free recall, appear more likely to result in positive outcomes (see Dixon, 2010 for further discussion). Unlike the Reid technique, there has been a substantial amount of empirical research pertaining to the PEACE interview model and its distinct phases (see Clarke & Milne, 2001 for a review), making this model more accessible for evaluation.

Research on the direct effects of PEACE training on officers initially showed encouraging results. McGurk, Carr and McGurk (1993) used a knowledge test before and after a PEACE training course as well as analysing simulated interviews after the course. The knowledge test showed an improvement in the knowledge of PEACE steps after training (over 6 months) with the simulated interviews also showing an improvement in terms of the skills of the interviewer (i.e. use of appropriate questions and amount of information

gathered). There has been a suggestion of difficulties with extending training into the workplace (Clarke & Milne, 2001) and some research has shown a more tentative positive effect of training with officers initially showing improvement but this declining over time in some of the more complex processes involved, such as interview structure and conversation management (Griffiths & Milne, 2006). This has led to the suggestion that officers should attend refresher courses periodically in order to keep standards high (see Clarke et al., 2011; Dixon, 2010; Gudjonsson & Pearse, 2011 for further discussion). Clarke et al. (2011) found that a week-long PEACE training course had little effect on the ability of officers to conduct interviews although officers from police forces that had a supervision policy performed better during the engage and explain phase of interviews (particularly in explaining the account to the suspect). This again implies that continued training is particularly important. The only major difference found in this sample was that trained interviewers took longer to conduct their interviews. This latter finding does not necessarily have to be viewed as negative however, as the authors suggested that all interviews were of a reasonable to high standard leading them to conclude that there has been a general improvement in interviews since the implementation of PEACE, with a good use of conversation management skills and comprehensive accounts from interviewees more likely, even for untrained officers (see also Dixon, 2010 for a discussion).

There has also been research on some of the specific steps involved in the PEACE model and their effect on the overall interview outcome. Walsh and Bull (2010) found that the most important step for the interview outcome was planning and preparation with a good outcome in this stage positively associated with overall interview quality (see also Read & Powell, 2011 for similar results). It is worth noting, however that some work suggests officers do not perform well in the planning and preparation phases (Clarke et al., 2011). Skilled interviewers, who show good outcomes in all stages of the interview, are more likely to obtain comprehensive accounts with confessions (Walsh & Bull, 2010). Walsh and Bull (2012) found that most tasks were ignored during the engage and explain phase as well as poor levels of rapport in general across the interviews (see Clarke et al., 2011 for a similar finding). This is concerning as other research has suggested the importance of rapport for gaining confessions (e.g. see Read & Powell, 2011).

In theory, the PEACE model and its various stages shows promise. Despite initial positive results, there may be some trouble extending the training to the workplace. For example, there appear to be problems with investigators establishing rapport which could be critical to the amount of information that a suspect is willing to give (Read & Powell; Walsh & Bull, 2012). There also seem to be difficulties with the implementation of all of the steps, in particular it appears that officers do not realise the importance of Planning and Preparation for the final outcome of the interview. Finally, the literature suggests that continued training is essential for high standards of interviewing.

As the Cognitive Interview is often used in conjunction with the PEACE model (Clarke & Milne, 2001), examining its empirical support is necessary when considering the efficacy of information gathering approaches to suspect interviews. The two largest meta-analyses of the research pertaining to the Cognitive Interview both find that this interview technique leads to a large increase in details when compared to other interview techniques (Köhnken et al., 1999; Memon et al., 2010). Although these results show the utility of the Cognitive Interview with regards to obtaining large amounts of information, most of the studies reflect witness and victim interviews. Geiselman (2012) created a revised Cognitive Interview for suspect interviews in an attempt to improve deception detection. He found that some of the steps involved in the Cognitive Interview were particularly useful for detecting some form of deception in a suspect interview, such as asking the suspect to tell the story in reverse chronological order or make a drawing of the incident. These tasks are mentally demanding and make it easier for the interviewer to determine any inconsistencies in the suspect's story (this argument will be discussed in more detail in a later section). This suggests that the Cognitive Interview is not only useful for gathering a comprehensive account but also for revealing any inconsistencies/weaknesses in a lying suspect's account.

The findings of research on the PEACE model as well as the Cognitive Interview suggest that the information gathering approach to interviewing suspects can lead to high levels of information gained about the crime. Although there are some weaknesses regarding the training of officers in the PEACE protocol and some of the specific steps, there appears to be a consensus that interviewing has improved since the implementation of PEACE, with the finding

that even untrained officers are now conducting higher quality interviews. It has been proposed that with the problems surrounding the application of specific steps, the onset of PEACE could be viewed as more of a social movement (see Dixon, 2010; Clarke & Milne, 2001 for further discussion), with a move toward more ethical police interviews.

Accusatory vs Information-gathering.

The literature regarding direct comparisons of accusatory and information gathering approaches to interviewing suspects generally favours the information gathering approach (see Dixon, 2010 for discussion). As mentioned before, concerns over the unethical nature of accusatory interview methods have been raised as the steps of the Reid technique encourage officers to lie to and manipulate suspects (see Gudjonsson & Pearse, 2011; Dixon, 2010 for further discussion). Vrij et al. (2007) found that accusatory interviews tend to lead to suspects making short denials whereas information gathering styles result in more information as the suspect is encouraged to talk more. Moreover, accusatory style interviews, such as the Reid technique, are more likely to cause suspects to feel discomfort during the interview (Vrij et al., 2006b). This again highlights the unethical nature of this technique. Though Inbau et al. (2011) argue that pressure is necessary to break down a suspect in order to obtain a confession, Vrij et al., (2006b) found that although the accusatory style interview caused suspects more discomfort, both interview styles (accusatory and information gathering) cause the suspect to feel pressure.

There has been concern raised about the probability of an accusatory approach leading to higher rates of false confessions. Data on whether the Reid technique results in more false confessions than information gathering techniques is currently unavailable (see Gudjonsson & Pearse 2011 for further discussion), however, there is a consensus that the way in which information gathering styles such as PEACE are carried out will safeguard against false confessions (Dixon, 2010; Gudjonsson & Pearse 2011; Vrij et al., 2006b; Vrij et al., 2007). Inbau et al. (2011) claim that false confessions are not more likely with the Reid technique, as the BAI prior to commencement of the interview has already established that only suspects who are likely to be guilty are subjected to

the nine steps. However, this claim has not been scientifically verified (see Meissner et al., 2010 for further discussion).

Although actual statistics are not available, research on false confessions has shown that the use of certain minimisation tactics (Russano et al., 2005) can increase levels of true and false confessions and the presentation of false evidence to the interviewee (Kassin & Kiechel, 1996) can increase rates of false confessions. With this in mind, it appears that innocent suspects who are interviewed using an accusatory approach such as the Reid technique are at greater risk of falsely confessing than those who are interviewed using an information gathering approach such as the PEACE model. This does not mean, however, that guilty suspects are less likely to confess during an information gathering interview, as it has been suggested that more true admissions are likely during this type of interview as suspects feel more comfortable and have better rapport with the interviewee (Vrij et al., 2006b; Holmberg & Christianson, 2002, Kebbel et al., 2010).

As can be seen, the literature on different interview styles with suspects appears to favour the information gathering approach as it is more ethical, leads to more information being obtained and can even lead to more confessions. Having said this, when criticising the Reid technique, it is really just the model itself that is available for critique as there are hardly any large scale field studies examining its effectiveness (see Dixon, 2010 for further discussion). However, research suggests that the Reid technique is largely unethical and manipulative and uses a protocol based on (false) common sense notions than scientific research. As a response to prominent miscarriages of justice, both UK and US police forces adopted a change in attitude toward police investigation. It has been suggested that The Reid technique is sold as a commodity in the US rather than as a research-driven approach to interviewing (see Dixon, 2010; Meissner et al., 2010 for further discussion). Despite problems with training and implementation, the PEACE model has been described as a social movement (Clarke & Milne, 2011; Dixon, 2010) which has altered the general view of investigative interviewing in the UK. There are now steps to implement PEACE in the USA due to a change in attitude toward investigative interviewing, with information gathering approaches now favoured by research funded by the US government.

True and false confessions

Confession rates remain largely consistent across studies of suspect interviews, ranging from about 55% to 62% (see Pearse & Gudjonsson, 1999; Moston & Engelberg, 2011 for further discussion). The presence of a confession is often how an interview is defined as successful in research and in the field (see Moston & Engelberg, 2011 for further discussion) and confession evidence is the most powerful form of evidence in criminal investigations (Kassin & Neumann, 1997; see Kassin & Gudjonsson, 2004; Kassin, 2008; Kassin et al., 2010 for further discussion). It is therefore important to examine the variables which may affect true and false confession rates.

Although it is pertinent to discuss what interview tactics may convince a guilty suspect to confess, it has been suggested that guilty suspects have already decided whether or not they are going to confess before they enter a police interview and interview tactics have little effect (Moston & Engelberg, 2011). However, Holmberg and Christianson (2002) used factor analysis to identify two styles of police interviewing; humanity (being respectful and friendly) and dominance (being aggressive and impatient), with the humanity style generating more admissions from suspects and the dominance style generating more denials. Despite this, specific characteristics of the suspects and/or case play a greater role in the decision to confess than police interview tactics. For example, Pearse et al., (1998) found that a prior history of imprisonment made a confession less likely as well as the presence of a legal advisor (also see Moston & Engelberg, 2011 for further discussion). Younger suspects also confess more readily than older suspects do (Medford, Pearse & Gudjonsson, 2003). There is a growing body of research suggesting that the most important factor in a suspect's decision to confess is the evidence held against them (Kebbel et al., 2010; Sellers & Kebbel, 2009; see Moston & Engelberg for review and discussion). Gudjonsson and Petursson (1991) gave questionnaires to convicts who had confessed to crimes and identified three main factors which affected their decisions; external pressure, internal pressure and proof. The most common factors were related to the perception of proof in that the suspects felt there was no point in denying the crime if the evidence against them was very strong. Moston et al., (1992) also found a similar pattern with 9.9% of suspects confessing if the evidence was weak

compared to 66.7% if the evidence was strong. In a lab study, Kebbel et al. (2006) found that mock suspects were more likely to confess in the face of accurate witness evidence about the mock crime. The research on why suspects confess suggests that although interview tactics may have some power, differences between suspects and cases need to be taken into consideration when assessing the confession outcome. Strength of evidence and how it is used by the police appear to be an important factor in the decision making process for suspects who are unsure of whether or not to confess.

Contrary to the belief that innocent people would not confess to a crime they did not commit (see Kassin, 2008 for further discussion), from as far back as the Salem witch trials of 1692, large numbers of people have been wrongfully imprisoned on the basis of false confessions (for reviews, see Leo & Drizin, 2004; Kassin et al, 2010). Although the exact prevalence rate is unknown (Kassin, 2008; Kassin et al., 2010) police investigators have estimated that 4.78% of innocent suspects have confessed to a crime they did not commit (Kassin et al., 2007) and that false confessions are present in 15-20% of DNA exoneration cases (see Kassin et al., 2010; Gudjonsson & Pearse, 2011 for further discussion). It is difficult to determine accurate prevalence rates for false confessions as no organisation records them (Kassin et al, 2010) and it is difficult to prove a confession to be false in the absence of any other evidence. In the largest review of false confession cases, Drizin and Leo (2004) examined 125 cases in the U.S.A. They found that the most common reasons for exoneration were that the real offender was found (74%) or new evidence was discovered (46%), meaning that in the absence of either of these, it is very difficult to identify false confessions. In this sample, 81% of the false confessors were wrongfully convicted. Due to the implications of false confessions, it is important to understand who is at risk of falsely confessing and what factors may affect false confessions rates.

Research indicates that one of the most important risk factors for false confessions is the suspect's age, with younger suspects being more likely to falsely confess (Gudjonsson et al., 2006; Leo & Drizin, 2004; Meyer & Reppucci, 2007 Redlich & Goodman, 2003). It is thought that this is mainly due to younger people being more suggestible (see Ceci & Bruck, 1993 for a review of children's suggestibility) and more likely to comply with an adult's demands (see Redlich &

Goodman, 2003 for further discussion). Research also indicates that psychological vulnerabilities such as mental health problems (Gudjonsson et al, 2006) and intellectual disabilities (Clare & Gudjonsson, 1995) increase false confessions. Due to this, in the UK youths and adults with psychological vulnerabilities are appointed an adult who takes on an advisory role throughout the interview process (an appropriate adult; PACE, 1984) partly to safeguard against false confessions (see Gudjonsson, 1993 for a review). As discussed earlier, some of the tactics that are used in the Reid technique may also increase false confessions. For example, Russano et al. (2005) found that when minimisation tactics (such as minimising the seriousness of the crime) were used, false confessions rose from 34.5% to 57.4%. The use of false evidence by interviewers has also been implicated in increasing false confessions (Kassin & Kiechel, 1996; Redlich & Goodman, 2003). The laws surrounding the use of some of these tactics by police are different in the UK to the USA. For example, in the UK officers are not permitted to deliberately deceive suspects whereas in the USA the rules are less stringent (see Moston & Engelberg, 2011 for further discussion). In the UK, officers are not permitted to present suspects with false evidence whereas the USA has no such law (Kassin et al., 2010). Although differences in false confession rates between the UK and USA are not known, some of the practices employed by officers in the USA appear more likely to lead to false confessions.

The importance of confessions for police investigations and court cases means that research in this area is necessary in order to determine what factors increase the likelihood that a guilty suspect will confess. Although in some cases a humanitarian approach can lead to a confession, individual characteristics related to the suspect and case are more likely to affect this decision. The most important factor in a suspect's decision to confess is the strength of evidence against them, with strong evidence leading to more confessions. By far the most widely researched area in relation to suspect confessions is the phenomenon of false confessions, whereby an innocent suspect confesses to a crime that they did not commit. Factors such as the use of minimisation techniques (Russano et al., 2005) and the presentation of false evidence can increase false confession rates (Kassin & Kiechel, 1996; Redlich & Goodman, 2003). It is also clear that youths and adults with psychological vulnerabilities are more likely to provide a

false confession (Gudjonsson et al., 2006; Leo & Drizin, 2004; Meyer & Reppucci, 2007 Redlich & Goodman, 2003), although in the UK this may be prevented with the use of an appropriate adult in such cases to inform the suspect of their rights and clarify any points of misunderstanding.

Detecting deception

Although there may be erroneous information in eyewitness reports this is mainly due to genuine errors in memory retrieval rather than a deliberate attempt to fabricate events (see Yarmey et al., 2006 for further discussion). In contrast, it is common for a suspect to consciously lie about aspects of the crime that they committed or deny involvement altogether due to the possibility of imprisonment and/or social condemnation (Gudjonsson & Petursson, 1991). It is important to be able to tell the difference between liars and truth tellers' statements and behaviour as the consequences of wrongfully concluding veracity may lead to a guilty person going unpunished or an innocent person going to jail. For these reasons, there is a considerable amount of research in the area of detecting deception (see DePaulo, 2003; Sporer & Schwandt, 2007; Vrij & Granhag 2012 for reviews). The following section discusses whether there are any discernible differences in lying and truthful people's behaviour and whether it is possible for interviewers to detect these differences.

The literature on detecting deception has consistently shown that lay people and professionals perform only slightly above chance when differentiating between liars and truth tellers (Levine et al., 2010; Masip et al., 2011; Meissner & Kassin, 2002; Porter et al., 2000; see also DePaulo, 2003; Vrij & Granhag, 2012 for reviews of deception detection research). Accuracy rates tend to cluster around 55-65% (e.g. see Levine et al., 2010; Vrij & Granhag, 2012; DePaulo, 2003) with observers showing more accuracy in detecting a suspect as truthful than detecting a suspect as lying (Granhag & Strömwall, 2001a). People are quite poor lie detectors because they base their theories on common sense notions that are not empirically supported (see Sporer & Schwandt, 2007; Akehurst et al., 1996; Colwell et al, 2006a; DePaulo, 2003 for further discussion). They also have a tendency to show a confirmatory bias – they look for information that is consistent with what they already believe and ignore contrary evidence leading

to a self-fulfilling prophecy (see Colwell et al, 2006a; Kassin et al., 2003 for further discussion). For example, some research has found that trained investigators show a tendency to perceive suspects as guilty and in turn conduct interviews in a way that elicits behaviour which appears deceptive (Kassin et al., 2003; Meissner & Kassin, 2002).

The beliefs in lie detection and abilities of trained investigators typically suggest that although training improves confidence in their ability it does not improve accuracy in lie detection (Colwell et al., 2006a; Kassin & Fong, 1999; Meissner & Kassin, 2002; Vrij & Mann, 2001 – although see Hauch et al., 2014 for a review which shows a small effect of training). This may be due to the nature of said training. Colwell et al. (2006b) surveyed police officers in the USA about what training they received in detecting deception. They found that training was typically a 2-day course, with the Reid technique the most widely taught technique. Additionally, 52% of officers reported that their training programmes did not teach them any of the scientific research regarding lie detection. They also found there was no follow up training or feedback programme for most of the officers (see Porter et al., 2000 for results indicating that training with feedback improves accuracy of detecting deception). Taken together these results suggest that training investigators in detecting deception does not improve their accuracy as the training requires that interviewers identify indicators of deceit that have little empirical support. This training increases investigators' confidence, which can be damaging as it can lead to a guilt bias. It is probable that if training is centred on empirical findings regarding lie detection with ongoing feedback offered, then officers may be better at detecting deception than lay people.

For training in lie detection to improve, it is first necessary to determine what verbal and non-verbal behaviours are reliably different between liars and truth tellers. In popular culture, liars are attributed many behaviours although research has shown that few actions can be reliably linked to deception (DePaulo et al., 2003). Perhaps the most common stereotype about liars' behaviour is that liars avert their gaze. In 2010, the Global Deception Research Team carried out a worldwide study (75 countries in 43 different languages with 2,320 respondents) on lay peoples' and police officers' beliefs about cues to deception. They found that the most common cue attributed to liars was gaze aversion (64% of respondents stated this). Other research of this type has similar findings (e.g.

Akehurst et al., 1996; Strömwall & Granhag, 2003; Zuckerman et al., 1981). Despite this widespread belief, in an exhaustive meta-analysis of lie detection data, DePaulo et al. (2003) found that gaze aversion is not associated with lying (also see Mann et al., 2004). However, incorrect beliefs about non-verbal indicators of deception do not end with gaze aversion. The belief in involuntary partial facial movements when lying (micro expressions; Ekman & Friesen, 1969) has limited support (e.g. see Porter & ten Brinke, 2008) as well as the belief that an increase in non-functional body movements (i.e. fidgeting, grooming behaviours) indicates lying (e.g. see Akehurst & Vrij, 1999; Mann, Vrij & Bull, 2004). It has been suggested that observers pay more attention to non-verbal cues as they believe that these behaviours are harder to control than language (see Vrij, 2008a for further discussion).

Collectively, these results suggest that the reason people cannot reliably detect deception is due to overreliance on poor behavioural indicators to deception. Despite the weak empirical support for using non-verbal cues to deception, the Reid technique advocates the use of body language and physical behaviour as cues to deceit (Inbau et al., 2011) and airport security staff sometimes make decisions based on Ekman's theory of micro expressions (see Porter & ten Brinke, 2008 for further discussion). It is also advised in the Cognitive Interview for Suspects that the interviewer should continually assess the body language of the suspects to predict if they are telling the truth (Geiselman, 2012). Given the evidence, it may be more fruitful to attempt to detect deception based on language than on physical/nonverbal indicators.

Research has shown that people typically rely on non-verbal cues to detect deception (e.g. see Bogaard et al., 2016; Vrij, 2008a) despite a growing body of research which shows that deception cannot be reliably gauged from non-verbal cues and that a liar's verbal behaviour is of greater utility (Bogaard et al., 2016; DePaulo et al., 2003; Hauch et al., 2014; Sporer & Schwandt, 2007; Vrij, 2008a). Moreover, Mann et al. (2004) found that better lie detectors use verbal more than non-verbal cues. One way that liars and truth tellers differ in verbal behaviour is the amount of words/information given, with research typically showing that liars tend to give less information than truth tellers when questioned (Geiselman, 2012; Granhag & Strömwall, 2002; Granhag et al., 2003; Soroichinski et al., 2003; Vrij et al., 2009; Vrij et al., 2012; see also Jensen et al., 2011 for results indicating

that innocent suspects use more complex language). This is thought to be due to the increased cognitive load experienced while lying resulting in liars attempting to keep their stories simple and appear consistent and not contradictory (e.g. see Vrij et al., 2012; Yarmey et al., 2006; see Sip et al., 2008 for further discussion).

Aside from merely considering the amount of information given, there are more systematic approaches to analysing verbal content to assess veracity. Statement Validity Assessment (SVA) is a verbal lie detector tool and is sometimes used in court as evidence in some European countries (see Vrij, 2008a for further discussion). The two most popular methods of SVA are Criteria Based Content Analysis (CBCA) and Reality Monitoring (RM). CBCA was created to assess the veracity of children's accusations of abuse and involves assessing written transcripts against a list of measures including spontaneous corrections and references to time and space (see Vrij et al., 2007; Vrij, 2008a for a full description). Theoretically, these details should appear less-often in deceptive statements due to liars rehearsing their stories. RM is also based on the assumption that statements about imagined events have different linguistic properties to statements of real life events. Statements about fabricated events contain more references to reasoning and thought processes whereas truthful statements contain more reference to sensory information (see Jensen et al., 2011; Vrij et al., 2007; Vrij, 2008a for a full description).

CBCA is sometimes used in criminal investigations to predict veracity whereas RM is usually only used in research (see Vrij et al., 2007; Vrij, 2008a for further discussion). Although tentative, research on the effectiveness of CBCA and RM shows positive results. Vrij (2005) conducted the first meta-analysis of CBCA studies and indicated an error rate of around 30% for detecting truth and lies, with CBCA suggesting that although this error rate is too high for use as expert evidence in court, it can still be used as a tool by police in the early stages of investigations as it does distinguish between true and false statements at levels greater than chance. However, Vrij et al., (2007) found that RM was better than CBCA at distinguishing between true and false statements and suggested that RM is a quicker and easier tool for investigators to use. In a comprehensive qualitative review of the relationship between deception and CBCA criteria, Vrij (2008b) found that although the criteria are imperfect indicators of deception, a consistent pattern emerges: as the theory of CBCA predicts, truthful statements

tend to contain more of the CBCA elements than deceptive statements do. Collectively, these results imply promise for the use of SVA for detecting deception in verbal statements, however, the extent to which they should be relied upon is still in question. As discussed by Vrij (2005), it may be that SVA is a useful tool for investigators for a preliminary analysis of the veracity of a statement in the early stages of an investigation, however due to the error rate, should not be relied upon as evidence in court.

Despite the reliance on non-verbal cues to deception there are circumstances where investigators may be more likely to rely on verbal factors, for instance when assessing consistency across multiple interviews (see Vrij et al. 2008b for further discussion). Firstly, the consistency of two different suspects' statements is of importance as many crimes are committed with more than one perpetrator (see Vrij et al., 2009 for discussion). Secondly, the consistency of one suspect's statement across repeated interviews is of importance as in real life investigations suspects are often interviewed more than once (e.g. see Granhag & Strömwall, 1999, 2001a, 2001b; Granhag et al., 2003; Yaremy et al, 2006 for discussion).

Veracity judgements are no better when viewing one interview than when viewing two or three (Granhag & Strömwall, 2001a, 2001b). This may be due, in part, to consistency being a commonly-used tool for detecting deception across repeated interviews (Granhag and Strömwall, 1999; Granhag & Strömwall, 2001a, 2001b, 2002; Granhag et al., 2003; see also Quas, Thompson & Clarke-Stewart, 2005; reviewed in Granhag & Strömwall, 1999; Vredeveltdt et al., 2014) with people assuming that consistency is an indicator of truth (i.e. 'the consistency heuristic'; Granhag & Strömwall, 1999). Despite this, research indicates that, contrary to lay beliefs, liars may actually be motivated to present a consistent story over time in order to avoid being caught lying. When recalling a true life event, memory is reconstructed over time (Loftus, 1974) with new details added in later accounts (reminiscence – see Hope et al., 2014; La Rooy et al., 2005; La Rooy et al., 2010; Odinet et al., 2013; Orbach et al., 2011) and some details omitted. In this way, liars and truth teller's statements may differ over time, with truth tellers attempting to reconstruct the memory and liars rehearsing their stories and attempting to appear consistent (i.e. the 'repeat versus reconstruct hypothesis'; Granhag & Strömwall, 2001a, 2001b, 2002; Granhag et al., 2003;

reviewed in Granhag & Strömwall, 1999). Moreover, research on pairs of mock suspects questioned together suggests that pairs of truth tellers are judged as less consistent with one another than pairs of liars are (Granhag et al., 2003; Vrij et al., 2012). Collectively, these results suggest that consistency should not be relied upon when attempting to detect deception as it does not take into account that liars regulate their behaviour to appear truthful.

Many lie detection techniques, such as the Polygraph test (see Grubin & Madsen, 2005 for a history and review) rest on the assumption that liars will be more anxious than truth tellers and thus exhibit physiological or behavioural responses accordingly. However, evidence for this claim is equivocal (see Vrij & Granhag, 2012 for further discussion). Indeed, suspects who are falsely accused of lying often behave in a similar way to those who are actually lying (Hartwig et al., 2010; Kassin & Fong, 1999). One of the problems for investigators and researchers of deception detection is that liars regulate their behaviour to appear truthful (e.g. see Akehurst & Vrij, 1999; Hartwig et al., 2010; see Sip et al., 2008 for a review). Due to similar subjective cues to deception across many cultures (Global Deception Research Team, 2010) a person who is attempting to lie would most likely have knowledge of these stereotypical cues and therefore act in a way contrary to these cues to avoid being caught. For example, Vrij et al. (2006a) found that liars attempted to appear honest by reducing non-functional body movements and giving the name of somebody else who could have committed the crime – both of which are indicators of truth-telling in the BAI. Additionally, innocent suspects report that their most common strategy for interviews is giving as much information as possible whereas guilty suspects report their most common strategy is managing their impression to appear truthful (Hartwig et al., 2010). These findings make clear the difficulty in detecting deception and go some way in explaining medium to low accuracy rates of observers for judging veracity.

Impression management may come at a cost, however, with some authors suggesting that self-regulating behaviours increase cognitive load, making deception a mentally demanding task (see Sip et al., 2008; Vredeveldt et al., 2014 for a review). Due to this, certain interview strategies designed to increase the cognitive load of the suspect can be used in order to detect deception (i.e. the cognitive lie detection approach; Vrij, 2015; see Vrij & Granhag, 2012; Vrij et al.,

2015 for a review), by increasing mental demands on the suspect. Here, differences between liars and truth tellers are more apparent (in terms of a decline in details and/or lack of consistency for lying suspects) when cognitive load is increased by asking unanticipated questions and strategically using evidence (see Blandón-Glitlin et al., 2014 for discussion). As liars plan answers to questions that they expect to be asked (see, e.g., Hartwig et al., 2007), unanticipated questions can lead to differences in liars and truth teller's statements. For example, Vrij et al. (2009) found that initial open ended questions (such as the type advocated in information-gathering approaches to investigative interviewing) did not distinguish between liars and truth tellers in terms of amount of details given but unanticipated questions did (i.e. questions about spatial and temporal features that are harder to plan for). Specifically, they found that liars gave more inconsistent answers relative to truth tellers when answering questions relating to spatial and temporal features of the event. They also found that asking suspects to draw the crime scene distinguished between liars and truth tellers as this was also thought to be an unanticipated request (also see Roos af Hjelmsäter et al., 2014 for similar results). Additionally, in the Cognitive Interview for Suspects, Geiselman (2012) advocates the use of unanticipated questions for detecting deception such as telling the story in reverse chronological order and making a drawing.

In addition to asking unanticipated questions, strategic use of evidence can increase lie detection accuracy by observers (the strategic use of evidence – SUE, Hartwig et al., 2005; see Vrij et al., 2011 for a review). For example, disclosing evidence later rather than earlier in the interview process reveals inconsistencies in liars' stories and leads to greater deception detection accuracy in observers (a rise from 43-62% accuracy from early to late disclosure, Hartwig et al., 2005; a rise from 56-85% accuracy post-training in SUE, Hartwig et al., 2006). Additionally, Clemens et al. (2011) found that liars were less consistent than truth tellers in their answers on planning and intent when the interview was conducted using SUE instead of early evidence disclosure, although the strength of evidence may change this relationship (Sellers & Kebbell, 2009). Collectively these results suggest that detecting deception is improved by interviewing in a way designed to magnify the differences between lying and truth telling suspects. By taking advantage of the increased cognitive load imposed by deliberately

deceiving someone, interviewers can ask questions that a lying suspect is less likely to have prepared for and disclose evidence in a way that exposes inconsistencies between a lying suspect's story and said evidence.

As can be seen from the research, lay people and professionals are relatively poor lie detectors as they tend to base their guesses on false common sense notions which are not empirically supported. For example, people tend to focus on non-verbal cues to deception despite research showing that non-verbal behaviour of liars and truth tellers is not reliably different. Verbal indicators of deceit which can be measured by SVA's shows more promise, however error rates still remain high. The main problem with detecting deception is that liars purposefully control their behaviour to appear truthful. This impression management is cognitively demanding, however, and there is now a growing body of research which indicates that differences between truth tellers and liars can be magnified by asking unanticipated questions and strategically using evidence. Collectively, the research suggests that training in lie detection should focus more on a cognitive lie detection approach which takes impression management and self-regulation into account.

Outcomes of suspect interviews: Interviewer and interviewee factors

In addition to different interview protocols, confessions and detecting deception, there are a number of other factors which may alter the interview outcome. The way in which the interviewer behaves can alter the course of the investigation, for example, the interviewer's perception of guilt (Kassin et al., 2003; Meissner & Kassin, 2002) and their use of empathy (reviewed in Oxburgh & Ost, 2011). Factors relating to the suspect can also have an effect on the outcome of the interview. For example, being innocent in and of itself can alter the process (Kassin & Norwick, 2004) as well as the type of crime committed by a guilty suspect (Kebbell et al., 2010). It is also pertinent to consider young suspects (Ceci & Bruck, 1993) and suspects with psychological vulnerabilities (Herrington & Roberts, 2012) as well as the difficulties that some suspects may have with memory for certain details (Cima et al., 2004) and what differences may arise from suspect interviews cross-culturally (Beune et al., 2010).

Interviewer's perceptions of the suspect they are interviewing can shape the interview process. For example, training and experience in interviewing can lead to biases among investigators in perceiving the suspect as guilty (Meissner & Kassin, 2002). This in turn can lead to the interviewer inadvertently eliciting behaviours that confirm their perceptions of guilt (Kassin et al., 2003; Meissner & Kassin, 2002). For example, Akehurst & Vrij (1999) found that movements made by police officers influenced the movement of the suspect. That is, the suspect made more physical movements that confirmed common sense (but false) beliefs about non-verbal cues to deception if they were being interviewed by an interviewer who was moving a lot. This shows the importance of the interviewer's behaviour during interviews and raises questions about the consequences of behavioural confirmation for innocent suspects.

This latter point is particularly pertinent in considering the behaviour of innocent suspects. Innocent suspects overestimate the extent to which others can see their internal state/thoughts ('the illusion of transparency'; Hartwig et al., 2005; see also Vrij et al., 2015 for discussion). This can lead to an innocent suspect giving more information as they believe that the interviewer can tell that they are telling the truth (e.g. see Masip & Herrero, 2012 for discussion). Additionally, lab experiments have shown that innocent suspects are less likely to invoke their right to silence and counsel ('Miranda rights'; e.g. see Kassin & Norwick, 2004), with 81% of innocent suspects waiving their rights compared to 30% of guilty suspects. This implies that innocence in itself can be seen as a risk factor during interview with innocent people having a blind faith in the justice system (e.g. see Kassin et al., 2010 for a discussion of this in terms of false confessions). Moreover, Hartwig et al., (2007) found that innocent suspects were less likely than guilty suspects to adopt a strategy for interrogation (38% of innocent suspects, 61% of guilty suspects adopted a strategy). Collectively this research suggests that innocent suspects may be at risk of being viewed as guilty due a belief that investigators can determine veracity and that justice is always served.

Considering the importance of interviewer perceptions and behaviour on interview outcome, some research has focussed on the behavioural style that the interviewer adopts and how this may affect the process. Holmberg and Christianson (2002) used questionnaires to examine offenders' retrospective

perceptions of how they were interviewed and how this may have affected the outcome. Results showed behaviour that could be split into two distinct categories, dominant (impatient, aggressive) and humanitarian (friendly, respectful). The dominant approach was linked to lower confession rates while the humanitarian approach led to suspects being more open and therefore more likely to give information and confess (see Kebbell et al., 2010 for a similar result). Furthermore, Vanderhallen et al., (2011) compared the witnesses and suspects' evaluation of their interview and found that witnesses felt less hostility when interviewers used the humanitarian approach. The suspects in this study suggested that the hostility they felt led to a chain reaction of behavioural confirmation leading to them being more closed in their responses.

Some work has encouraged the use of empathy during interviews with suspects to increase rapport and increase information obtained and the likelihood of confession (reviewed in Oxburgh & Ost, 2011). Despite this recommendation, the association between empathy and interview outcomes is equivocal. For example, Oxburgh et al. (2014) found that the use of empathy had little effect on the amount of information that suspects provided. This finding may be due in part to confusion over what empathy is when conducting an investigative interview (see, e.g., Dando & Oxburgh, 2016; see also Oxburgh & Ost, 2011 for further discussion). For example, Oxburgh et al. (2013) found that officers were unable to give clear, unambiguous definitions of what empathy is. Collectively these results show the importance of building and maintaining rapport during suspect interviews. Officers with an empathic manner may increase the amount of information obtained and some research suggests that empathy should be used, however, an agreed definition of empathy is required for further practice.

Another reason that empathy may be difficult to capture in suspect interviews is that the investigators may be dealing with crimes they have become emotionally attached to. For example, Oxburgh et al. (2013) examined police officers' perceptions of the difference in characteristics of interviews depending on the crime investigated. The officers reported that murder was the most stressful crime for them to investigate and that they became more emotionally attached during investigations into crimes concerning children. They also reported that they would have difficulty showing empathy for crimes involving sexual offences. These results shed light on an important and often undiscussed

factor of investigative interviewing; the effects of interviews on the interviewer. With increased scrutiny on police officers' actions, it is easy to forget that they too can be affected by the crimes they are investigating (see Oxburgh et al., 2013 for further discussion).

Consequently, investigators may conduct interviews with suspects differently depending on what crime has been committed (see Holmberg, 2004 for further discussion). Furthermore, sexual offenders sometimes show cognitive distortions that perpetuate their crimes which may not be present in offenders of non-sexual crimes (e.g. arguing that the victim seduced them; further discussed in Kebbell et al., 2010). On this basis, research has explored whether different interview strategies should be employed depending on offence type. For example, Kebbell et al. (2010) gave questionnaires to sexual offenders and non-sexual violent offenders regarding how they think offenders of their type should be interviewed in order to maximise the amount of information and increase chances of confession. Results showed that sexual offenders reported that a less dominant and more humanitarian approach in addition to an understanding of their cognitive distortions should be adopted (see Kebbell et al., 2008 for a similar finding), whereas violent offenders reported a more dominant approach would be more useful for them in order to obtain a confession. These results suggest that interviewing suspects should not be approached in an all-encompassing way but instead the specific case characteristics should be considered. During interview planning, the crime type should be taken into consideration and interviewer style should be adopted accordingly.

An interviewee factor that can affect the interview outcome is the suspect's age and/or mental capacity. Research has shown that children can be particularly sensitive to suggestive questions (e.g. see Ceci & Bruck, 1993) and that adults with psychological vulnerabilities (e.g. learning difficulty or severe mental health problem) have difficulties with certain question types, memory for an event and with certain language styles (Herrington & Roberts, 2012). It has also been suggested that suspects with mental health problems such as depression have a higher baseline for feelings of guilt due to their condition increasing the likelihood of false confessions (Herrington & Roberts, 2012; see also Gudjonsson et al., 2006). This evidence shows that special care should be taken when interviewing vulnerable suspects.

There is evidence that officers in the USA do not see the need for interviews with youthful suspects to differ from those with adult suspects; Meyer and Repucci (2007) attended a Reid technique training seminar lasting 32 hours and reported that only 10 minutes was spent discussing how to interrogate minors. They subsequently measured law enforcement officer's beliefs about interrogating minors and found that, although the officers indicated that they understood that children were more suggestible and may not understand some adult language, they did not indicate interrogations with minors should differ in terms of questioning, definitions used or deception tactics used. However, in the UK an appropriate adult is appointed for suspects who are juveniles or adults with psychological vulnerabilities in order to protect their rights and welfare (PACE, 1984). An appropriate adult is often a relative and sometimes a social worker (Littlechild, 1995; Medford et al., 2003). There have been some problems with implementing this scheme, however, with delays in securing an appropriate adult in some cases (Pierpoint, 2008) and some police interviews ruled as inadmissible in court due to appropriate adults not explaining legal rights properly (Thomson et al., 2007). Additionally, some of the literature on the use of appropriate adults suggests that it is unclear what training an appropriate adult should receive and what their exact role in the interview process is (see Herrington & Roberts, 2012; Hodgson, 1997 for further discussion). For example, some research has identified that there is no standardised training scheme for appropriate adults (Thomson et al., 2007). However, some results are promising. For example, Medford et al. (2003) examined the use of appropriate adults in suspect interviews. They distinguished between appropriate contributions (e.g. understanding and explaining legal rights, facilitating communication) and inappropriate contributions (e.g. answering on behalf of the suspect, being obstructive to the interview process). They found that appropriate contributions were four times more likely than inappropriate ones and that officers acted partly in line with PEACE protocol when an appropriate adult was present. It is clear that the concept of having an appropriate adult for juveniles and adults with psychological vulnerabilities, in order to protect their rights is promising, however, specific training is needed in order to make sure that they fulfil their role.

Another factor which may affect the interview outcome is the suspect's background. Beune et al. (2010) explored whether cultural differences affect the

amount of information given in response to different strategies. They defined two distinct types of culture; low context and high context. People from low context cultures are individual and independent of others and tend to use direct and explicit language. People from high context cultures are not encouraged to have individual thoughts, have very strong social bonds and tend to use indirect and evasive conversation. In this study real life interviews with suspects from the Netherlands were used as a low context group and suspects from Morocco were high context. This factor was examined in relation to three strategies; being kind (empathy), rational arguments (evidence, logic and proof) and intimidation tactics. It was found that more case relevant information was given by low context suspects in response to rational arguments and intimidation tactics than for high context suspects (see Beune et al., 2011 for similar results). This indicates that suspects' cultural background should be taken into consideration when interviewing them. Unfortunately, there is a lack of research in this specific area so recommendations based on these findings would be premature, however, these results shed light on the importance of cultural differences in suspect interviews.

Suspects sometimes claim that they have no memory of a crime and this is referred to in the literature as crime related amnesia (e.g. see Cima et al., 2004; Peters et al., 2013). Although some cases can be categorised as malingering, in order to avoid prosecution (Rogers & Cruise, 2000), there are cases in which the suspect fully confesses to the crime but does not remember details (Woodworth et al., 2009). Some researchers have explained the genuine cases of memory loss for crimes in terms of a type of dissociative amnesia (e.g. see Porter et al. 2001) sometimes referred to as a 'red-out' in which a suspect cannot remember parts or all of a crime that they have committed due to the emotional arousal felt at the time of the crime or afterward (e.g. see Peters et al., 2013 for further discussion). Evidence suggests that there are no cases of crime related amnesia in non-violent crimes supporting that emotional arousal or manifestation of guilt or shame may, in part, account for amnesia (Cima et al., 2004).

By contrast to 'red-outs', traumatic memories can be recalled more vividly than everyday memories ('trauma superiority affect'; Shobe & Kihlstrom, 1997). Woodworth et al. (2009) tested the memory of prisoners convicted of murder using memory assessment tools designed to examine dissociative experiences

related to the murder(s) they committed, a non-violent criminal act and a neutral childhood memory. The prisoners reported that they had trouble recalling aspects of certain memories at some points in their lives and this was most likely for murder, followed by non-violent criminal act followed by the neutral memory. Despite this, the prisoners reported that memory involving murder was the memory that they most often thought about and was most likely to cause them stress and anxiety. When coded by subjective means, the descriptions of the murders were more richly detailed and longer than other memories. This latter finding appears to support the trauma superiority effect. That the prisoners reported having trouble recalling the murder memory in the past may be evidence of a difference between their own perceptions of the memory and the objective judges who coded the descriptions (see also Christianson, 1992 for a review of how emotional stress can affect eyewitness memory).

During interview, investigators can attempt to overcome memory failures with the use of specific interview techniques. For example, it may be advisable to use some of the techniques that researchers advocate for improving the memory of victims and witnesses (e.g. see Fisher & Perez, 2007 for discussion). The Cognitive Interview for Suspects uses such tactics as reverse chronological recalling of events and drawing aspects of the crime for eliciting cues to deception. Although the tactics were originally developed to help eyewitnesses remember details of emotionally distressing crimes (Geiselman, 2012; see Fisher & Perez, 2007 for further discussion), they could be of use for willing suspects experiencing similar problems. It has also been suggested that two interviews may aid suspects with recalling aspects of a crime (one for episodic information and one for semantic information) in order to stop the suspect from becoming confused and resulting in a richer overall narrative (Read & Powell, 2011).

In summary, there are many factors that can affect the outcome of a suspect interview negatively. For example, if the interviewer presumes that the suspect is guilty when he/she is actually innocent, this can cause a chain reaction of behavioural confirmation which can put the suspect at risk (Kassin et al., 2003; Meissner & Kassin, 2002). This is especially pertinent in light of research suggesting that innocent suspects give more information and are more likely to waive their rights. This may also be of particular importance when the suspect is a juvenile or psychologically vulnerable. In the UK, an appropriate adult will be

appointed in order to protect the rights of vulnerable suspects, however, this scheme has not always worked, with some cases inadmissible due to appropriate adults not fulfilling their role correctly. Another important factor to consider is the type of crime that has been committed, with evidence showing that perpetrators should be interviewed differently according to what crime they have committed. At the heart of investigative interviewing is the underlying processes of memory as a police interview requires the interviewee to recall an autobiographical event. If this event caused emotional trauma (or guilt/shame) to the suspect, then there may be problems retrieving information about this memory. This can be helped by using certain interview strategies such as the Cognitive Interview in order to enhance accessibility of the memory.

Conclusions

Police interviewing of suspects has advanced from the coercive and sometimes violent practices employed in the past in order to gain a confession (Leo, 1996; reviewed in Leo 2004). In the UK, changes in legislation and interview protocol (e.g. PACE, 1984) were designed to increase the transparency of the investigative process and develop empirically tested models for interviewing suspects in order to decrease the risk of false confessions and generally protect the welfare and rights of suspects (see Dixon, 2010 for discussion). Until recently, the reaction to miscarriages of justice in the USA has been somewhat different, with the most widespread suspect interview technique aimed at gaining a confession rather than gaining information about the crime. The last few years has seen a rise in research on information gathering interview techniques across North America.

It is clear from the research that an information gathering approach (such as PEACE), with a focus on open-ended questions, would be preferred for eliciting high amounts of information from a suspect. Additionally, a rapport-based model such as this may lead to more true confessions (Holmberg & Christianson, 2002) while also safeguarding against false confessions. In trying to determine the best way to interview a suspect in order to gain as much information as possible, it is useful to consider research on the interviewing of victims/witnesses. Such research advocates the use of open-ended questions in order to reduce

rates of misinformation (see Ridley et al., 2013 for discussion) and also increase the amount of relevant information gained from a police interview. This can also be seen in research on repeated interviews which indicates that by using open-ended prompts reminiscence can be seen with more information gained in later interviews (La Rooy et al., 2010). Assuming the same memory processes apply to suspects who are motivated to cooperate with interviewers (i.e. not denying involvement/lying), reminiscence should also be seen in repeated interviews with suspects. This may be why research on lie detection has shown truthful suspects tend to show less consistent responses than lying suspects across interviews, as they are attempting to reconstruct their memory of events rather than repeat the same story (i.e. the 'repeat versus reconstruct hypothesis'; Granhag & Strömwall, 2001a, 2001b, 2002; Granhag et al., 2003; reviewed in Granhag & Strömwall, 1999).

Having considered the literature on suspect interviewing and investigative interviewing as a whole, this thesis aims to develop the literature on suspect interviewing by examining whether suspects show reminiscence over repeated interviews and whether certain question types yield more detail from suspects than other question types, as has been demonstrated in repeated interviews of victims/eyewitnesses to crime. Moreover, this thesis will examine the social factors that may enhance reminiscence in suspects (motives to cooperate), both via a case-study of a high profile murder investigation in America, and through a laboratory experiment where factors that may enhance cooperation when describing a transgression are primed experimentally.

Chapter outlines

The third chapter of this thesis is a case study of a real police investigation including analysis of three recall attempts by a suspect. The aim of this case study is to examine what question types are used in a real life suspect interview, the amount of information yielded from each question type and whether the suspect provides more new information over repeated interviews and, if so, what factors may have affected this. The fourth chapter of this thesis is a laboratory experiment exploring the use of a subtle prime to increase cooperation when writing about a past (minor) transgression. The aim of this experiment is to

examine whether increasing cooperation can increase the level of reminiscence when providing a second written account after a time delay (i.e. proportion of new, non-contradictory information). The fifth chapter is a discussion of the findings presented within this thesis, the potential limitations of this work and how this work may motivate future research in the area of suspect interviewing.

Chapter 3 : A case study of suspect repeated testimony during a murder investigation

Introduction

Suspect cognition and behaviour during forensic interviews is a fundamentally different phenomenon to eyewitness cognition and behaviour, for example, in light of the suspect's motives to provide a confession and/or cooperate with the interviewer (see, e.g., DePaulo et al., 2003; Gudjonsson, 2006 for reviews) and the increased cognitive load that impression/reputation management (i.e. deception) entails (see, e.g., Sip, 2008; Vredeveltdt et al., 2014 for further discussion). In light of the difficulty in establishing the veracity of field interview data, research in this area typically focusses on suspect behaviour during 'low-stakes, low-arousal' scenarios, which, in turn, improves internal validity (see, e.g., Lamb et al., 2007 for further discussion). Memory recall for past events in victims and witnesses is typically-theorized as a reconstruction (Ceci & Bruck 1993; Loftus 1974), with accounts differing over time as some details are omitted in later interviews and new details are included. This may be different for suspect interviews if the suspect is not motivated to cooperate with the interviewer, however, as individuals who deliberately deceive, when recalling past transgressions aim to do so by providing listeners with a *consistent* story (i.e., the 'repeat versus reconstruct hypothesis'; Granhag & Strömwall, 2001a, 2001b, 2002; Granhag et al., 2003; reviewed in Granhag & Strömwall, 1999).

Motives to deceive also appear to alter the amount of details provided by suspects across repeated interviews in the laboratory. For example, participants who deceive others in a task produce relatively fewer details during later interviews (Yarmey et al., 2006). It may therefore be that a cooperative suspect who is not attempting to deceive may produce more information in later interviews. Most of the literature on the phenomena of reminiscence, however, is derived from studies of eyewitness interviews. Reminiscence is the phenomena whereby new, previously-unrecalled information is reported across time during repeated interviews (see, e.g., Hershkowitz & Ternner, 2007; Hope et al., 2014; Orbach et al., 2011). Typically, free-recall is more vivid and detailed with an increase in cumulative details over repeated recall attempts (hypermnnesia, see

Bluck et al. 1999), which may be useful to an investigator who requires more information. However, reminiscence may also be costly in certain forensic contexts. For example, repeated suggestive questioning, such as when the interviewer asks questions that point the interviewee to a desired answer, increases confabulation (i.e. false memories) over time in eyewitness interviews (e.g., Ceci et al., 1994). Despite these concerns, in children, recall of details improves over a second interview while errors do not increase over time when open-ended questions are used (La Rooy et al., 2005). Indeed, overall details increase among children over time in repeated interviews, although these increases are reduced when delays between interviews are longer (La Rooy et al., 2005). Complementing this finding, field research of child eyewitness interviews suggests that a greater proportion of details are recalled during a second interview (Hershkowitz & Terner, 2007). Indeed, when using the NICHD protocol, repeat interviews of children lead to an increase in the number of details the child provides, including perpetrator-related details in later interviews, and help to clarify information given in prior interviews (La Rooy et al., 2010). One of the few field cases to have compared eyewitness recall over repeated interviews with a victim's account of events, suggests that repeated interviewing of children is related to accurate reminiscence over time (Orbach et al., 2011), particularly when delays between interviews are relatively short (La Rooy et al., 2005, 2010; Orbach et al., 2011). Collectively, these findings suggest that repeated interviews with victims/witnesses have utility when incorporated into best practice. Repeated interviews with suspects who are willing to talk may provide similar results.

An evidence-based protocol is essential for interviewing victims/witnesses, such as protocols for posing specific types of question to the interviewee in the right context (see, e.g., La Rooy et al. 2010 for further discussion). Although a relatively neglected area of research, knowledge from this area is beginning to be applied in order to improve protocols for interviewing suspects to a crime. For example, Canadian field studies of written interview transcripts suggest that open-ended questions generally elicit much greater information from suspects than leading questions do (Snook et al., 2012). However, suspect interviewers appear to be rather poor at adhering to recommended practice such as allowing the suspect to speak for most of the interview (the '80/20 rule') and providing the

suspect with the opportunity to freely-recall the crime while avoiding an accusatory line of questioning (Snook et al., 2012).

The purpose of this case study is to provide the first examination of reminiscence, consistency and the use of different question types in the presentation of a suspect of murder over repeated interviews. Using the principles from research on the NICHD protocol applied to repeated interviews of eyewitnesses (see, e.g., Lamb et al., 2007; Lamb et al., 2011 for reviews), similarities are examined between prior research in this area and the current study of a suspect's testimony given to police in a recent high-profile case that gained a great deal of attention from American media.

This case study examines two police interviews and one written statement from an individual suspected of murder. In 2012, American media (CNN, 27/01/16, <http://edition.cnn.com/2013/06/05/us/trayvon-martin-shooting-fast-facts/>) reported that a 28-year old man (George Zimmerman) had been accused of the murder of a 17-year old African-American male (Trayvon Martin) in a suburban neighbourhood of Florida, via a single gunshot wound to the abdomen. The suspect was reported as also having sustained injuries (bleeding from the back of the head and nose), with Zimmerman admitting to murder but claiming self-defence in response to an attack by the teenage victim. While the claim of self-defence was initially accepted by courts, information later received from 911 calls on the night of the event led to an FBI investigation following claims that Zimmerman ignored the dispatcher when told repeatedly not to follow Trayvon Martin. Following media-led petitions to arrest the suspect for what they judged to be a racially-motivated crime, Zimmerman was later charged with second-degree murder (11/04/12) and released on bail (23/04/12) before being declared not guilty (13/07/2013). Here, two interview transcripts and one written statement are analysed in order to examine the use of different question types across the interviews, the factors that predicted the yield of information provided by the suspect and the consistency of Zimmerman's testimony across time. Although this case study is an exploratory analysis of the behaviour of one suspect, the primary aims of the research are to establish i) whether, similar to eyewitnesses, suspects provide a more complete account of a crime over repeated recall attempts and ii) whether certain question types yield more information from the suspect than others (e.g. open-prompts). Collectively, this case study will

highlight whether similar cognitive and social factors shape suspect and eyewitness testimony over repeated interviews.

Method

The case study

The study is based on material collated from the State of Florida versus George Zimmerman (Florida, USA) during two days of February 2012. Data were analysed from George Zimmerman's written statement (26/02/12, written by the suspect himself, Word count = 612), his first interview with police during a walk-through at the scene of the crime (27/02/12 at 17:20) and his second and final interview with police at Sanford police station (27/02/12 at 18:34). The same interviewer conducted both interviews. The first interview tape spanned 19 minutes and 10 seconds (substantive part of interview = 16 minutes and 52 seconds, Total word count = 3242) and the final interview tape spanned 1 hour, 11 minutes and 58 seconds (substantive part of interview = 21 minutes and 14 seconds, Total word count = 3223). In both interviews, the suspect dominated the conversation relative to the interviewer (Interview 1: Suspect speech = 90% of all speech, Interview 2: Suspect speech = 82% of all speech). Video copies of interviews and the written statement were collated by the researcher's external advisor (Dr La Rooy). All interview transcripts were anonymized by the researcher. All procedures for secondary data analysis were granted full ethical approval from the School of Social and Health Sciences Ethics Committee at Abertay University (Appendix 1).

Procedure for coding transcripts

Firstly, the written statement and both video interviews were transcribed. The transcripts were double checked to make sure that they had been faithfully transcribed. The written statement was coded in an identical manner to the two interview transcripts except for coding for question type as this was a free recall from the suspect with no input from the police. Transcripts were coded according to procedures detailed in the National Institute of Child Health and Human Development (NICHD) protocol, which included protocols for categorizing the type of question asked by the interviewer and type of response given by the

interviewee (reviewed in Lamb et al., 2007; Lamb et al., 2011). Only the substantive parts of the interviews were used for analysis (i.e. general speech before and after the main interview were not relevant to the incident and were not transcribed).

For the purpose of this study, details were defined as units of information (words or phrases identifying or describing objects, individuals' actions, location, time, emotions/thoughts or sensations), following prior research (e.g., Lamb et al., 1996, 2008; Orbach et al., 2011). Units of information were also assigned to the type of question that elicited the information. Question types used were 1) 'Invitations' (open questions designed to elicit free recall such as 'tell me what happened?'), 2) 'Directive prompts' (questions that refocus the interviewee's attention on information already given, and usually begin with 'How', 'What', 'Where' or 'When'), 3) 'Option-posing prompts' (questions that offer a set of specific answers from which the interviewee must choose and that usually require a yes/no response), 4) 'Confirmatory questions' (that relay information already provided and ask the suspect for confirmation e.g. 'you were walking back through but you walked to where he disappeared, right?') and 5) 'Facilitators' (sounds or words used to encourage the interviewee to continue, such as 'mhmm' or 'right'). As facilitators are not questions in and of themselves, information provided after a facilitator, was coded in relation to the question immediately preceding the facilitator.

Within each transcript, details that were relevant to the incident (e.g. individuals, locations, actions and events) were assigned a specific coding category. These categories included specific codes from the protocol and additional codes devised by the researcher that were relevant to the specific case. In total, 18 codes were used (see Table 3.1) which were grouped together to create 27 categories (e.g. 'suspect' and 'action' = 'suspect's action').

After assigning a coding category and question type (that elicited the response, interviews 1 and 2 only) to each unit of information, each unit was then categorized as either 'new' (i.e. reminiscence), 'repeated' (i.e. consistent) or 'contradictory' relative to prior testimony (i.e. consistency *within* the interview was not measured). In other words, information was coded once per interview. If the same detail was repeated more than once *within* an interview, only its first mention was coded (following Orbach et al., 2011). Omission of details provided

in earlier recall attempts were not coded for as reminiscence was the main phenomenon of interest for this analysis. No contradictory details were reported in any of the interviews. All information, by definition, in the written interview was coded as 'new'. For the first interview, information was coded either as 'new' (not mentioned in the written statement) or 'consistent with written' (consistent with the written statement). For second interview, details were either coded as 'new' (not mentioned in the written statement or first interview), 'consistent with written', 'consistent with interview one' or 'consistent with written and interview one'.

For reliability coding, a random sub-set of 25% of the transcripts were independently coded by a second rater. Reliability regarding number of details and consistency of details across interviews was assessed using Cohen's Kappa (Cohen et al., 2003). All disagreements were discussed until a consensus was reached. The overall Kappa for number of details was 0.71 and for consistency across details was 0.93 representing high agreement between coders.

Table 3.1 Table of coding categories. Codes were combined to create 27 categories for analysis (e.g. 'suspects' actions' SA, 'witnesses' verbal content' WVC).

Code	Category	Meaning/Example
S	Suspect	
V	Victim	
W	Witness	Man who comes over after gunshot
A	Action	
L	Location	
NT	Number of times	e.g. "Several times", "Continued to..."
VC	Verbal content	
ET	Emotions and thoughts	e.g. Reference to emotions and guessing others' intentions
SP	Sensory perception	
BP	Body part	Also can refer to whole body
O	Object	
IF	Identifying features	
EF	Environmental features	
OL	Onlooker	Person observing through glass doors
OP	Operator	
PO	Police officer	
P	Position	e.g. movement
PA	Paramedic	

Initial processing of data

Data are presented in absolute and proportional terms. In order to calculate the potential 'payoff' from question types across interviews, the yield for each question type was also calculated. This was calculated as the mean number of words per category of question divided by the mean number of words per question across the interview. Thus, scores above 1 indicate a greater than average 'payoff' for a question type in terms of length of response given by the suspect. Finally, data are also presented in a separate analysis according to the categories 'Suspect' (All details reported beginning with code 'S'), Victim (All details reported beginning with code 'V') and 'Peripheral' (All other reported details).

Results

The coding procedure resulted in 110 coded units of information for the written statement, 205 coded units of information for the first interview and 248 coded units of information for the second interview. During the first interview, confirmatory questions (29.03% of all questions) yielded the greatest amount of information from the suspect (71.12% of all words), followed by option-posing questions (48.39% of all questions, 24.54% of all words). Invitations (3.23% of all questions) and directives (19.35% of all questions) yielded only a minimal amount of information from the suspect (0.62% and 3.71% of all words uttered by suspect respectively). The majority of the details provided by the suspect (68% of all coded information) in the first interview were not provided in the written statement (see Table 3.2). Of this 'new' information, 54.29% was elicited via option-posing questions and 42.14% was elicited via confirmatory questions. Almost no new information was elicited via invitations (0.71%) or directives (2.86%). Of the information consistent with the written statement (32% of all coded information), 63.08% was elicited via option-posing questions and 35.38% was elicited via confirmatory questions. Again, minimal information was elicited via invitations and directives (0% and 1.54% respectively) (see Table 3.3).

During the second interview, invitations (9.38% of all questions) yielded the greatest amount of information from the suspect (65.32% of all words) followed by option-posing questions (6.25% of all questions, 19.01% of all words),

confirmatory questions (62.50% of questions, 8.65% of all words) and directive questions (21.88% of all questions, 7.02% of all words). The majority of the details provided by the suspect (54% of all coded information) in the second interview were not provided in either the written statement or the first interview. Most of the 'new' information, was elicited via invitations (64.44%) followed by option-posing questions (17.04%) and directive questions (13.33%). Confirmatory questions elicited minimal 'new' information (5.19%).

The cumulative amount of new details provided by the suspect across both face to face interviews was more for details relating to the suspect than for peripheral details (see Figure 3.1).

Across all interviews, invitations yielded the most information from the suspect (284 mean words per question), followed by confirmatory questions (77 mean words per question), option-posing questions (61 mean words per question) and directive questions (18 mean words per question) (see Table 3.4).

Table 3.2 Consistency in reported information across three pieces of testimony by the suspect (Written statement, interview 1 at scene of the crime, interview 2 at the police station). Numbers are expressed as a proportion and in absolute terms.

	Testimony			Total
	W	1	2	
Total	110 (0.20)	205 (0.36)	248 (0.44)	563 (1)
New (reminiscence)	110 (0.29)	140 (0.36)	135 (0.35)	385 (1)
Repeated (consistent)	-	65 (0.37)	113 (0.63)	178 (1)

Table 3.3 Consistency in reported information across three pieces of testimony (Interview 1: relative to written statement, Interview 2: relative to interview 1 and written statement) and split by type of interviewer question. Numbers are expressed as a proportion and in absolute terms.

	Question type				Total
	Invitation	Directive	Option-posing	Confirmatory	
New (Total)	88 (.32)	22 (.08)	99 (.36)	66 (.24)	275 1
Repeated (Total)	59 (.48)	1 (.01)	41 (.33)	23 (.19)	124 1
New (Interview 1)	1	4	76	59	140
Repeated (Interview 1)	(.01) 0	(.03) 1	(.54) 41	(.42) 23	1 65
New (Interview 2)	(0) 87	(.02) 18	(.63) 23	(.35) 7	1 135
Repeated (Interview 2)	(.64) 59	(.13) 0	(.17) 0	(.05) 0	1 59
	(1)	(0)	(0)	(0)	1

Nearly one quarter of details in the second interview were also reported in both the written statement and the first interview (24% of all coded information). All of the information consistent with the written statement and first interview was elicited via invitations (100%). Some details in the second interview were also provided by the suspect in the first interview but not the written statement (16% of all coded information). The majority of this information was elicited via invitations (90%), followed by option posing questions (7.5%) and confirmatory questions (2.5%). A small amount of information in this interview was reported by the suspect in the written statement but not the first interview (6%). All of the information consistent with the written statement was elicited either via invitations (92.86%) or directive questions (7.14%).

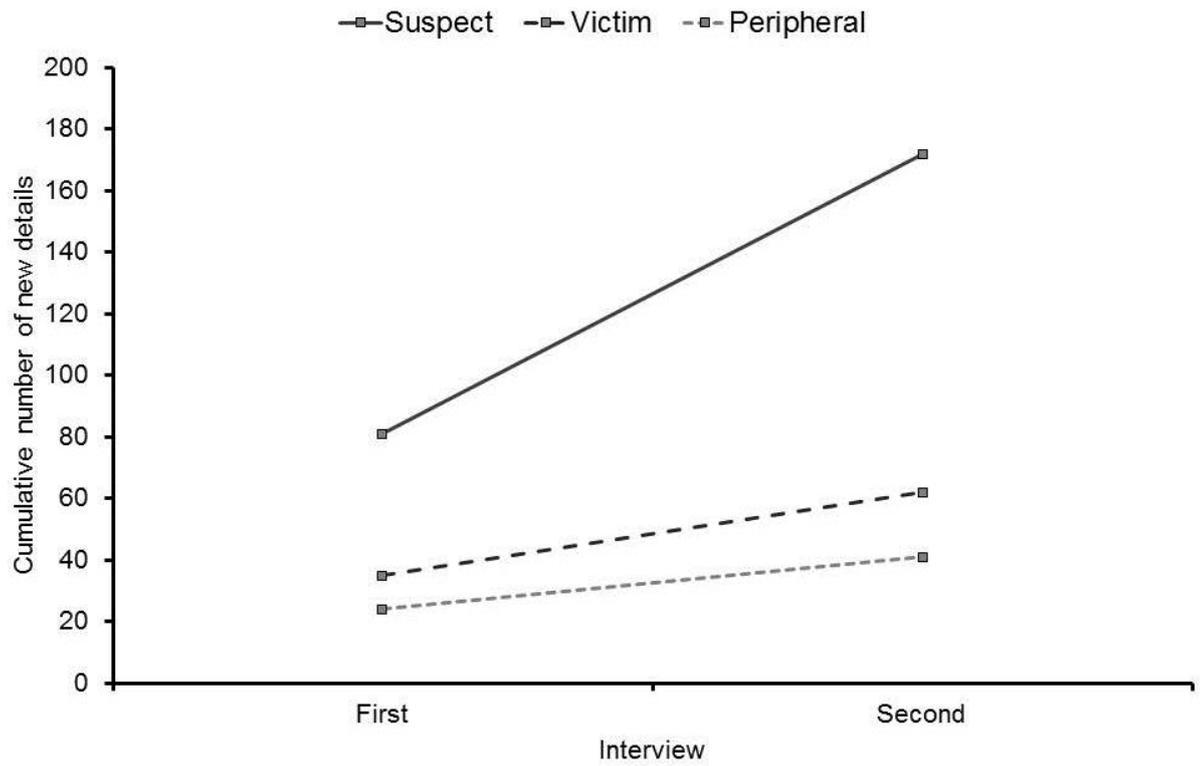


Figure 3.1 Cumulative number of new details provided across both face-to-face interviews, coded according to type of detail.

Table 3.4 Yield across the two interviews from different question types. Yield was calculated as mean words per question divided by mean words per question *across question types*. Scores above 1 indicate greater-than-average ‘payoff’ yielded by question type in eliciting a response from the suspect. Mean WPQ = Words uttered divided by frequency of interviewer utterances for each question type.

	Question type				Total
	Invitation	Directive	Option-posing	Confirmatory	
Yield (Total)	3.87	0.24	0.83	1.04	-
Mean WPQ	284	18	61	77	73
Words uttered	1135	228	1039	2217	4619
Yield (Int. #1)	0.19	0.19	0.51	2.45	-
Mean WPQ	18	18	48	230	94
Words uttered	18	108	714	2069	2909
Yield (Int. #2)	3.97	0.18	1.73	0.08	-
Mean WPQ	372	17	163	7	53
Words uttered	1117	120	325	148	1710

Discussion

In this case study, two interview transcripts and one written statement from a suspect of murder were examined in order to analyse: the extent to which reminiscence versus consistency was observed during his testimony; the different question types posed by interviewers across testimony; and the extent to which different question types yielded more or less information from the suspect. Firstly, reminiscence was observed among the suspect during both interviews. Over two thirds of all information coded at first interview was not provided in the written statement and over half of the information coded in the second interview represented information that was not reported either in the prior interview or written statement. Over time, greater reminiscence by the suspect pertained specifically to details about himself, while the cumulative increase of new details about the victim and peripheral details were both relatively stable

from first to second interview. This could be due to the nature of this particular case. As the suspect had already confessed to the crime, he was aiming to convince the police that he was acting in self-defence when he shot the victim. Thus, he provided most information about his own actions, and more new information about his own actions, in order to explain his motives for them (self-defence).

Secondly, the data reveal the extent to which different lines of questioning were useful in yielding information from the suspect. Here, invitations (e.g. “tell me everything that happened”) yielded nearly four times the average length of response from the suspect across his testimony, despite being the least-used question type. Critically, when examining yield across the different interview sessions, while confirmatory questions generated the greatest yield from the suspect at the first session at the scene of the crime (~2.5 times the average length of response from the suspect), invitations generated the greatest yield from the suspect at the second session in the police station (~4 times the average length of response from the suspect). Collectively, analysis of this field data suggests that suspects yield more information across time depending on certain contexts (i.e. the environment in which they were questioned) and lines of questioning, with some lines of questioning (e.g. directive questions such as “what time did that occur?”) yielding far less than the average length of response from the suspect.

These field data complement field and experimental research on repeated interviews of eyewitnesses to crimes (e.g., Hershkowitz et al., 2007; La Rooy et al., 2005; Orbach et al., 2011), by suggesting that reminiscence is also observable in suspects to crimes. Indeed, these results imply that despite potential differences in the motivation to cooperate between suspects and victims/witnesses, overlap is still observed in the cognitive processes involved in memory recall when providing testimony, at least in the record provided by this suspect. Here, similar to witnesses, the first recall attempt from the suspect did not yield a complete account and instead may have acted as context reinstatement (see Tizzard-Dover & Perterson, 2004 for further discussion), from which reconstructions of the event are developed over time in light of specific lines of questioning from the interviewer (see also Howe et al., 1993). Collectively,

these analyses suggest that repeated interviews are also beneficial in obtaining more detailed information from suspects.

Of note, best practice guidelines encourage the use of open-ended prompts when interviewing eyewitnesses as they elicit more free recall which is richer in detail and yields better-quality information than suggestive lines of questioning (Lamb et al., 2007; La Rooy et al., 2005, 2010). This field data is consistent with previous research on lines of questioning of suspects which also finds that open-ended questions are rarely used by the interviewer (e.g., Oxburgh et al., 2014; Snook et al., 2012). Here, open ended questions were rarely used despite the high yield of information per response in response to invitations by the suspect. These findings are consistent with prior work which suggests that investigation-relevant information (Oxburgh et al., 2014) and more details (Snook et al., 2012) are elicited from open-ended questions despite their low use. Here, 32% of all new information was elicited by invitations and 36% of all new information was elicited from option-posing questions.

Of note, further research should attempt to replicate this pattern of results across different suspects and contexts. Here, the current suspect was highly cooperative and had answered all of the questions asked of him and had already confessed to the crime. Interviewers thus did not have to overcome resistance from the suspect such as dealing with denial of the crime or refusal to talk. As such, the interviewers treated him as a potential perpetrator rather than potential victim of crime, as analysis of transcripts suggest that police were primarily concerned with the events that resulted in loss of life rather than the injuries the suspect sustained (which may have favoured a verdict related to self-defence by the suspect). Due to the cooperativeness of the suspect and the single-case methodology used here, it may be inappropriate to generalise these findings to repeated testimony of suspects to crime more generally (e.g. when drawing strong conclusions about the *type* of details provided by suspects). Nonetheless, this case study provides converging evidence for the phenomena of reminiscence when both suspects and eyewitnesses undergo repeated interviews. Variation in suspect cooperativeness would be an important variable to further examine in systematic analyses of available field data.

Additionally, there was little reason for the investigators to believe that the suspect was attempting to deceive them. It is worth noting, however that a truth verification device was used during the second interview in order to determine if the suspect was in fear for his life when he shot his gun. Although this part of the interview was not coded and analysed in the study (as it was not technically in the substantive part of the interview), it is interesting to consider in terms of the bigger picture of suspect interviewing and in light of research on lie detection (see DePaulo et al., 2003 for a meta-analytic review). An officer used a computer based system to analyse indicators of stress in the suspect's voice when answering specific questions. The officer develops control (i.e. Is the colour of the walls green?) and target questions (i.e. were you in fear of your life when you shot the guy?) with the suspect. Once they have decided on the questions which will be asked, the suspect answers the questions whilst the voice-stress analysing programme is running on a laptop. The results of this are not discussed in any other recorded interview. Any results relating to this were not known to have had a bearing on the case. Research indicates that it is difficult to distinguish between the levels of stress in liars' and truth tellers' vocalisations (e.g. see Ford, 2006; Rothkrantz et al., 2004 for further discussion), similar to other behavioural indicators of deceit (e.g. see DePaulo et al., 2003). In light of this, truth verification devices of any kind should not be permitted in interviews with suspects unless they are found to be scientifically reliable.

In conclusion, this is the first case study, to knowledge, that systematically examines the content of a suspect's testimony over repeated interviews in light of different lines of questioning from the interviewer. These findings complement work on reminiscence over repeated interviews of witnesses to crime and suggest that different question types are more effective at yielding new information from a relatively cooperative suspect, particularly about the suspects involvement in this particular case. Multiple interviews of suspects thus should be encouraged where possible in order to gather sufficient information for processing.

As this chapter demonstrates that a cooperative suspect can provide more information over repeated interviews, it may be useful to consider factors which affect the level of cooperation of a suspect during interview. Given that there are potential limitations with case study methodology, but ethical concerns with investigating this line of research in the laboratory, the next chapter aims to

examine this using experimental techniques (i.e. high internal validity). The chapter will examine factors that may enhance cooperation within a laboratory setting (i.e. reminiscence during repeated testimony) when a convenience sample of participants are asked to recall a prior minor transgression in writing. This approach is underpinned by theory from evolutionary psychology ('the watching eyes effect'), which uses a well-established framework to examine why reputational concerns enhance cooperation among humans when these concerns are 'activated' using experimental priming techniques.

Chapter 4 : The ‘watching eyes effect’ facilitates reminiscence when confessing to a minor transgression over a repeated interview

Introduction

The previous study revealed that a cooperative suspect can behave similarly to a victim/witnesses during repeated recall attempts in terms of the underlying memory processes involved in repeated interviews. Specifically, over three recall attempts, the suspect provided more information and more new information over time. This pattern of results may not be typical for suspects of crime in general, who may have motives to deceive or withhold information during interviews. Due to these initial findings, the current experiment examined the potential effects of increased cooperation on reminiscence.

Repeated interviews facilitate the recall of new information from victims and witnesses of crime (i.e. reminiscence, reviewed in La Rooy et al., 2010), particularly when protocols for best-practice are followed to encourage free-recall of past events (e.g. the use of open questions, reviewed in Lamb et al., 2007). For example, in one case study of a child witness over a four-month period of interviewing, the greatest proportion of information given to interviewers was collated from the third interview of four, constituting 31% of all new information provided across interviews (Orbach et al., 2011). Further analyses of child interview data suggest that new information, gathered in a second interview, constitutes nearly a quarter of all information provided by children across repeated interviews (Hershkowitz & Terner, 2007).

In addition to field data, laboratory experiments demonstrate that children recall new information at additional interviews, particularly when the delay between interviews is short (La Rooy et al., 2005). Reminiscence is thought to occur over repeated interviews as the first interview re-exposes the interviewee to the memory of the event, acting as context reinstatement (e.g. see Herskowitz et al., 2007; Tizzard-Drover & Peterson, 2004 for discussion), which, in turn, provides additional cues for future recall and enhances accessibility to the original memory (Howe et al., 1993). In this way, the reconstructive nature of memory can be seen (see Ceci & Bruck, 1993; Loftus, 1974; Schacter et al., 1998), with accounts changing over time as new information is added and some old

information is omitted (La Rooy et al. 2010). In sum, forensic professionals can gain high-quality information from using protocols for best practice (Lamb et al., 2007) over repeated interviews (reviewed in La Rooy et al., 2010).

Repeated interviews of suspects of a crime represent an under-researched area of the literature. Guilty suspects have fundamentally different motives to eyewitnesses in how they present themselves over time when providing testimony. Consistent with the proposal that reputation management and impression management are critical social components of deception (see Sip et al., 2008 for discussion), experimental work suggests that motives to deceive shape the nature of testimony provided (see, e.g., Vrij & Granhag, 2012 for a review). Here, contrary to folk belief and/or some legal opinion which associates a *lack of* consistency in testimony with deception (i.e. the consistency heuristic; Granhag and Strömwall, 1999; Granhag & Strömwall, 2001a, 2001b, 2002; Granhag et al., 2003; reviewed in Granhag & Strömwall, 1999, see also Quas, Thompson & Clarke-Stewart, 2005; reviewed in Vredeveldt et al., 2014), individuals who deceive tend to present a consistent account over time (e.g. Granhag & Strömwall, 2002; Granhag et al., 2003) when compared to truth tellers, with liars providing fewer new details at a second interview (Granhag et al., 2003, Yarmey et al., 2006).

In this work, high levels of consistency in recounting a past event is thought to be associated with deception as this strategy reduces the cognitive effort associated with managing one's presentation (see, e.g., Sip et al., 2008), in contrast to the standard reconstructive nature of memory when such motives are absent (Schacter et al., 1998) which, in turn, leads to reminiscence during free-recall of a past event over time (see Ceci & Bruck, 1993 for discussion). Because of this, individuals who are attempting to deceive aim to do so by keeping their stories simple and consistent (i.e., the 'repeat versus reconstruct hypothesis'; Granhag & Strömwall, 2001a, 2001b, 2002; Granhag et al., 2003; reviewed in Granhag & Strömwall, 1999). Collectively, in light of this line of reasoning, deceptive suspects would be less-likely to incorporate new information into testimony over time when asked to recount a prior transgression.

Although deception and impression management are social processes shaped by context and circumstances (Sip et al., 2008), no published research has tested for potential variation in self-presentation in the forensic context. When

interviewing suspects of a crime, reputational concerns would likely motivate differences in suspect testimony and the extent to which he/she cooperates with the interviewer (i.e. by providing new information). One well-established phenomena in both the field and laboratory ('the watching eyes effect'; Bateson et al., 2006) suggests that subtle cues to being watched increase cooperative acts such as the amount of money allocated to an economic game partner (Hayley & Fessler, 2005; Oda et al., 2011), charitable donations (Bateson et al., 2006; Powell et al., 2012), reduced littering (Bateson et al. 2013; Ernest-Jones et al., 2011) and the displacement of petty crime away from locations where 'watching eyes' are present (bicycle crime, Nettle et al., 2012). Cooperative behaviour in light of watching eyes is thought to occur, at least in part, due to observation by a third party activating concerns for one's reputation, an important factor in the evolution of human cooperation via indirect reciprocity (i.e. 'I scratch your back, someone else will scratch mine'; Nowak & Sigmund, 2005). Moreover, evidence suggests that the watching eyes effect can be activated even with extremely subtle cues (e.g. dots that indicate a facial configuration; Rigdon et al., 2009) and that cooperative behaviour when eyes are watching is not qualified by general concerns for violating norms specific to a local area (Bateson et al., 2013). Thus, subtle cues to being watched would be predicted to activate reputational concerns (i.e. because they perceive their actions to be under scrutiny; see also Ito et al., 1996 for discussion on effects of similar cues on drawing attention toward self) which, in turn, would strengthen cooperation with an interviewer in the forensic context. In light of potential ethical concerns in this area of research (i.e. confessing to a wrongdoing), this issue was explored by testing for subtle effects of observation (the presence of a web camera) on increased cooperative behaviour when individuals are asked to write about a prior minor moral transgression as vividly as possible. Here, cooperative behaviour is defined as the tendency to present new, non-contradictory, information at a second interview one day later, in contrast to a relatively consistent account of a prior transgression (i.e. managing one's reputation, see e.g., Granhag & Strömwall, 2002; Granhag et al., 2003; Sip et al., 2008; Vredeveltdt et al., 2014). It was predicted that the presence of a web camera (i.e. 'watching eyes') at an initial session would facilitate greater reminiscence at a second experimental session compared to when no such cues are present.

Method

Participants

Forty participants (13 males, Mean age = 25.44 years, SD=8.45 years) took part in a two-part laboratory experiment. The sample was a mixture of students participating for course credit and individuals who responded to flyers and/or advertisements or were recruited via word of mouth. Participants were recruited for a study on confessions and recall of life events (minor moral transgressions) over time. Close friends of the experimenter were not recruited in order to avoid potential confounds in their responses to the task (writing about a minor transgression). All procedures for recruitment and data collection were approved by the Ethics Committee of the School of Social and Health Sciences, Abertay University (Appendix 2).

Procedure

Participants were instructed to spend up to 15 minutes writing privately and to themselves about a prior minor moral (not legal) transgression that they were comfortable writing about. Here, a minor transgression was defined in instructions as a wrong, misdeed, an indiscretion, something mischievous or an example of misbehaviour. Participants were asked to think and write about a transgression that they 'got away with' (i.e. nobody found out about it). Although four participants did not adhere to this instruction, we do not exclude these individuals from our sample as this was not relevant to our specific hypotheses (i.e. within-person consistency versus change in testimony over two sessions). Participants were asked, without identifying specific individuals, to recall, as vividly as possible, the event at the time, their thoughts and feelings and the thoughts, feelings and actions of other people/persons where applicable. They were instructed to provide as much detail as possible so that, in theory, the event could be re-enacted in the way they describe it.

Each participant was randomly-allocated either to the experimental condition (eyes watching) or control condition (eyes not watching). Participants were randomly allocated within-gender, in order to avoid skew of males or females allocated to one condition. In both conditions, a laptop was setup at a

constant position approximately 41cm away from the edge of the desk, 54cm away from the seated participant to his/her left, and approx. 25cm away from the sheet of paper they used to write their confession. The laptop was positioned close enough that they could see themselves partly on the web camera but the laptop was not directly in-front of the participant. In the experimental condition, the laptop was open with the web camera (Toshiba HD Web camera, in colour) turned on and maximized to full-screen view. In the control condition the laptop was switched on but closed.

After providing consent and reading task instructions, participants in the experimental condition were told by the experimenter that the laptop next to them belonged to another student who was sharing the laboratory with the experimenter for a separate study. They were told in each case that the camera was not recording them, but had been left turned on in order that everything was setup in a specific order for the start of their study. They were asked not to move the laptop. No guise was used in the control condition and the laptop was simply on (in the same position) but closed. In both conditions, participants were then told that unless they had further questions, they would now be left to write and the experimenter would return in 15 minutes, or they could leave the room when they had finished writing as much as they could within the time limit. At the end of writing, participants were asked to place their script in an envelope provided. If necessary, participants were told to finish the sentence they were on as they approached the 15-minute duration. Participants then confirmed their second appointment with the experimenter for the following day at approximately the same time of day. Second sessions occurred between 19.5 hours and 27 hours after the first session.

The second session followed an identical procedure to the first session except that (in both conditions) the guise was omitted from the procedure and the laptop was closed but switched on in the same position as in the first session. This procedure was followed in order to test for the possible effect of our 'watching eyes' manipulation across time. Participants were reminded to focus on the same episode as reported during the first session. After completion of the second session, participants were fully debriefed and were asked to give their thoughts on the purpose of the experiment. Importantly, no participants in the experimental condition guessed that the presence of the laptop and web camera

was a focus of the current experiment, with the exception of one participant in the experimental condition who suggested that the experiment may have been related to memory and feeling under scrutiny.

Coding of transcripts and initial processing of data

All transcripts were coded in an identical manner to Chapter 2. As the coding categories do not represent a focus of the current experiment, they are not reported here. Here, the same units of information were analysed (reminiscence/new information, repeat/consistent information) as in Chapter 2, however omissions were also coded in the current experiment, representing the amount of information for each participant that was reported in the first session but not the second session (see Orbach et al., 2011). Contradictory information was coded but could not be analysed as it was only found in a minimal number of cases. No participants reported contradictory information *within* a single session and only five instances of information contradictory to the prior session were recorded in the second session (between 1 and 5% of information provided by five participants). For the main analysis, the proportion of reminiscence ($N_{\text{new information session 2}}/N_{\text{Total information session 2}}$), proportion of repetition ($N_{\text{old information session 2}}/N_{\text{Total information session 2}}$) and proportion of information omitted in session 2 ($N_{\text{information unique to session 1}}/N_{\text{Total information session 1}}$) were calculated separately. Word count and units of information reported were also calculated. As the proportion of reminiscence and proportion of repeated information tended to equal one when summed (i.e. except when contradictory information was reported), reminiscence bias was used in the main analysis. High scores on this dependent variable reflect a tendency to report new information during a second written confession. Conversely, low scores on this variable reflected a tendency to repeat information consistent with the first session and/or (in a minority of cases) report information inconsistent with the first session. All dependent variables were normally distributed across both experimental conditions (all $KS < .20$, all $p > .052$). It is important to note that in order to test this hypothesis, and as reminiscence, by definition, has to be measured in a follow-up session, this design represents an optimal way of testing the hypothesis under consideration as the procedure for the study is identical for all participants except the guise/presence of the camera

in session one for participants in the experimental condition. Indeed, presence of the camera across both sessions (in the experimental group) would mean that it would be difficult to conclude whether the priming manipulation had effects on the content of written testimony (whether information provided is new or old) or amount of information provided *over time* (i.e. after a delay) or whether any effects observed are qualified by an interaction with the session in which they provided testimony.

For reliability coding, a random sub-set of 25% of the transcripts were independently coded by a second rater (the same independent rater used in Chapter 3). Reliability regarding number of details and consistency of details across interviews was assessed using Cohen's Kappa (Cohen et al., 2003). All disagreements were discussed until consensus was reached. The overall Kappa for number of details was 0.76 and for consistency across details was 0.9 representing a high level of agreement between coders.

Results

A mixed ANOVA was conducted on the dependent variable words produced in the session, with the within-subjects factor *experimental session* (first session, second session) and the between-subjects factor *experimental condition* (eyes watching, eyes not watching). This analysis revealed that although participants tended to write more words in the second session ($M=295$, $SD=150$) than in the first session ($M=276$, $SD=122$) and this increase tended to be specific to the eyes watching condition ($M_{S1}=310$, $SD=111$, $M_{S2}=349$, $SD=156$) but not the control condition ($M_{S1}=242$, $SD=127$, $M_{S2}=241$, $SD=125$), there was no significant effect of *experimental session* or higher-order interaction between *experimental session* and *experimental condition* (both $F(1,38)<3.42$, both $p>.07$, both $np2<.084$). The effect of *experimental condition* was significant, however ($F(1,38)=4.82$; $p=.034$, $np2=.11$). Independent samples t tests demonstrated that, collapsed across sessions, participants wrote more when eyes were watching in the first session ($M=329$, $SEM=28.66$) than when eyes were not watching in the first session ($M=242$, $SEM=27.68$, $t(38)=2.20$; $p=.034$, effect size $r = 0.34$, see Figure 4.1, Panel a).

A separate mixed ANOVA on the dependent variable amount of information provided in the session, with the within-subjects factor *experimental session* (first session, second session) and the between-subjects factor *experimental condition* (eyes watching, eyes not watching) also revealed no significant effect of *experimental session* ($F(1,38)=3.63$; $p=.064$, $\eta^2=.09$), and no interaction between *experimental session* and *experimental condition* ($F(1,38)=1.60$; $p=.21$, $\eta^2=.04$), but did reveal a significant main effect of *experimental condition* ($F(1,38)=5.25$; $p=.03$, $\eta^2=.12$). Independent sample t tests demonstrated that, collapsed across sessions, participants provided more information when eyes were watching in the first session ($M=46.50$, $SEM=4.16$) than when eyes were not watching in the first session ($M=33.63$, $SEM=3.79$, $t(38)=2.29$; $p=.03$, effect size $r = 0.35$). Importantly, these initial analyses demonstrate that the effects of our subtle prime on the *amount* of words written and amount of information provided were consistent across test sessions.

A between-subjects ANOVA was conducted on the dependent variable reminiscence bias in memory at the second experimental session, with the between subjects factor *experimental condition* (eyes watching, eyes not watching). This analysis revealed the predicted main effect of *experimental condition* ($F(1,38)=5.66$; $p=.023$, $\eta^2=.13$), whereby a greater proportion of information in session two was new information (i.e. reminiscence) in the eyes watching condition ($M=.36$, $SEM=.04$) than when eyes were not watching ($M=.24$, $SEM=.03$, effect size $r = 0.36$; see Figure 4.1, Panel b). A separate between-subjects ANOVA on the dependent variable proportion of information *omitted* at the second experimental session, with the between subjects factor *experimental condition* (eyes watching, eyes not watching) revealed no main effect of *experimental condition* ($F(1,38)=3.18$; $p=.082$, $\eta^2=.08$), although participants tended to omit more old information at the second session when eyes were watching at the first session ($M=.29$, $SEM=.03$) than when eyes were not watching at the first session ($M=.21$, $SEM=.03$). Descriptive statistics revealed that the difference in words written reflected 87 additional words in the experimental condition (eyes watching/web-camera on) and nearly 13 extra details (12% greater reminiscence) provided when the web camera was on in the initial session than when the web camera was not present in the initial session.

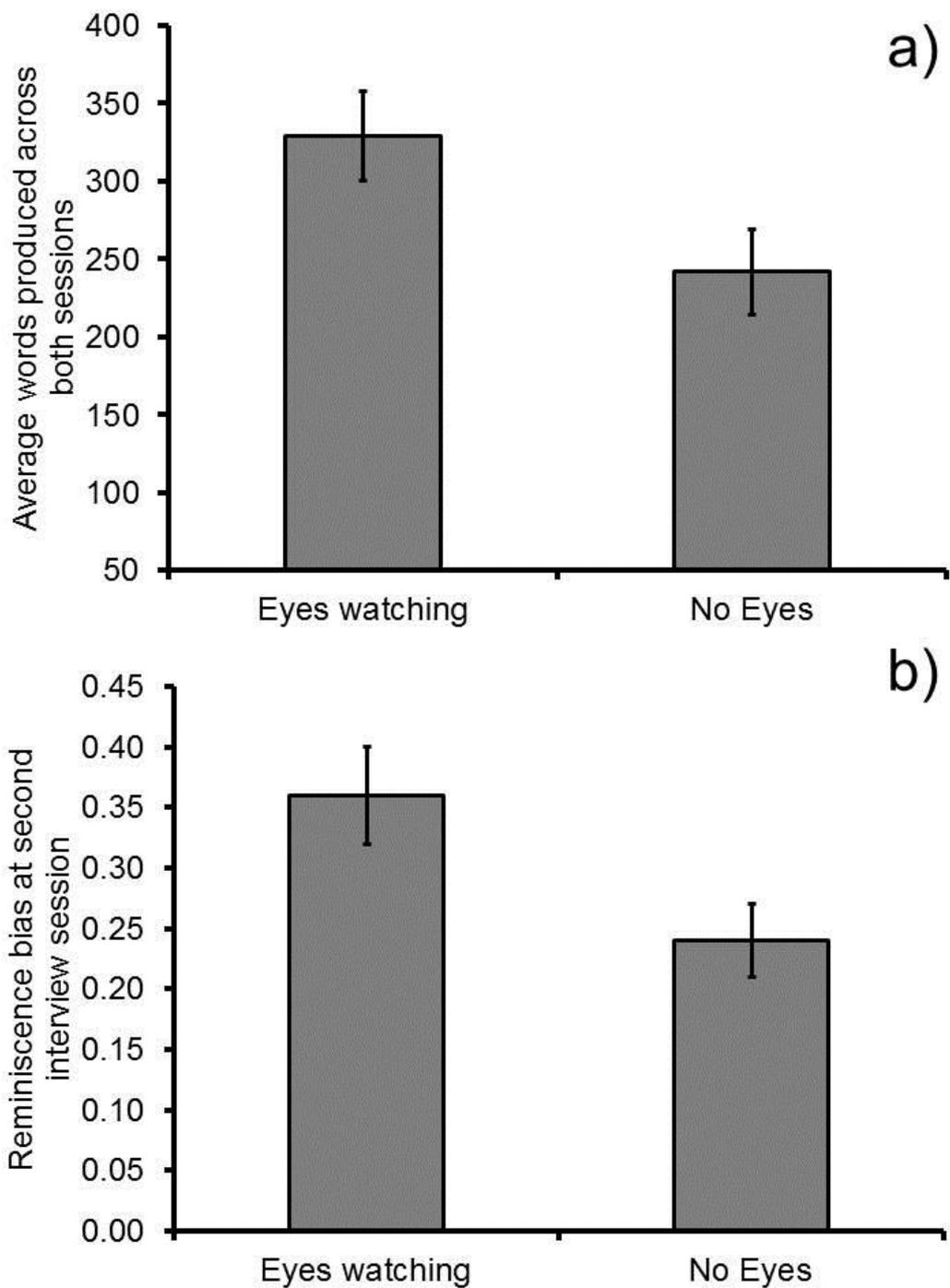


Figure 4.1 The main effect of watching eyes on mean words produced across both sessions (Panel a, effect size $r = 0.34$) and tendency to reminisce at second interview (i.e. produce new information, effect size $r = 0.36$).

Discussion

In order to test the hypothesis that the feeling of being watched would facilitate reminiscence (i.e. greater cooperation when providing a written confession of a prior minor transgression), a subtle prime of a web camera was used. Here, analyses revealed that participants in the watching eyes condition wrote more and provided more information across both sessions than participants in the 'no eyes' condition. Moreover, participants who wrote about a transgression when eyes were watching at the first session were more likely to report new information at the second session (reminiscence) than participants who wrote about a prior transgression when no eyes were watching in the first session, confirming hypotheses. Collectively, when providing a written confession to a minor transgression, the subtle presence of a web camera heightened reminiscence approximately 23 hours after the first session. Indeed, this change in reminiscence reflected 87 additional words and nearly 13 extra details (12% greater reminiscence) when eyes were watching than when they were not watching.

Collectively, the data suggest that subtle cues to being watched facilitate cooperation as evidenced by more new information reported a day later. Importantly, this effect is not qualified by the amount of information provided at session two increasing more generally, which suggests that the subtle web camera prime was pervasive across a short time delay. Participants in the watching eyes condition gave more information in the second session even though the web camera was not present. This can be explained by considering the overall effect that the presence of the web camera had on the participants in the first session. Research has shown that if the first recall attempt is particularly good in terms of the amount of details reported, this can facilitate later recall attempts (see Hope et al., 2014). In other words, having a web camera present in the first session encouraged the participants to comply with the task demands of writing in as much detail as possible. By writing in as much detail as possible in the first session, the memory traces for this event were likely strengthened, which in turn would increase access to new information during the second recall attempt. Also of note, the experimental manipulation did not appear to alter behaviour at a conscious level as all participants at debriefing phase (except one)

were unaware that the camera played any role in the experiment. Anecdotally, several participants in our control condition, by contrast, claimed at the debriefing phase that they would have guessed the manipulation had they been in that condition.

These findings present a novel application of the watching eyes effect to the forensic context. These data are consistent with the proposal that human cognition is sensitive to cooperation when concerns about one's reputation are activated experimentally (e.g., Bateson et al., 2006; Hayley & Fessler, 2005), in order to maintain a prosocial reputation in case of future need of reciprocity from third parties (Bateson et al., 2013; see also Nowak & Sigmund, 2005). This line of reasoning would suggest that individuals who feel under scrutiny in the forensic context do so because of concerns for their reputation, therefore priming individuals with this paradigm should motivate greater cooperation. In the current experimental context, cooperation was evidenced by the participant cooperating with the experimenter's request to provide as much detail as possible about a prior moral transgression. As consistency in testimony is thought to be associated with attempts to maintain one's reputation in the face of a transgression by providing a *consistent* story (i.e., the repeat versus reconstruct hypothesis; Granhag & Strömwall, 2001a, 2001b, 2002; Granhag et al., 2003; reviewed in Granhag & Strömwall, 1999) *new* information provided at session two is thus classed as a cooperative act in this context.

Given the nature of this experiment, it could be viewed that this paradigm does not test the phenomenon of interest (repeated interviews with suspects of crime). The participants in this study were not recalling a crime that they had committed and were not being asked to lie about anything. As such, there were no 'high stakes' associated with performance in this task. The results here instead give insight into the underlying memory processes at play while recalling an event that might cause feelings of guilt/shame. They also give insight into how cooperation may affect memory recall in these settings. However, it is worth noting that while the stakes in this task were low, in part, due to ethical considerations with this area of research, an effect was still observed even with a 'minimal manipulation' (Prentice & Miller, 1982) of writing about a prior transgression in the presence of a web camera (which almost all of our participants did not associate with the study when debriefed). As such, the effects

observed here may be more substantial in the real-world when stakes are raised (i.e. because reputational concerns are more salient in this context). Alternately, if the observed differences between the experimental and control conditions were smaller (but replicated) in an ecologically-valid setting (e.g. because the stakes are raised and there is a motive not to cooperate), the current pattern of results may still have real-world practical implications if relatively minor increases in details provided are of utility to investigative interviewers (e.g. if the detail is central to the case). Further work could help resolve these issues.

Despite the differences between the methods used in this study and setting of a suspect interview there are potential forensic applications of this research. The participants in this experiment were not directly interviewed or questioned in any way, and so any application would technically be more suited to written police statements than formal interviews. The data here raise the possibility that the presence of cameras either at interview or during the crime may moderate suspect testimony. For example, the presence of two-way mirrors during a police interview may shape the content of suspect testimony. Similarly, the presence of others during a written statement may moderate suspect testimony, as the watching eyes effect is thought to be weaker when others are present, given that the presence of others is thought to override the watching eyes prime (Ernest-Jones et al., 2011; Powell et al., 2012). Further research into these issues, and whether they moderate the amount of information given to interviewers, is likely to prove fruitful.

It would be interesting to test the watching eyes effect in an actual interview setting. For example, further research could develop a mock crime experiment where participants are actually questioned rather than just providing free recall whilst a web camera is present. It would also be interesting to see if the watching eyes effect was a moderating factor when asking participants to lie about something (e.g. a mock crime). In terms of application to the field, if data were available, it would be possible to examine whether the presence of CCTV at the crime scene had an effect on a suspects' responses during interview.

In conclusion, this experiment used a novel, subtle prime to induce the watching eyes effect, which was associated with more information provided by participants in the experimental condition across sessions, and greater reminiscence approximately one day later. This experiment extends research on

the watching eyes effect and the repeated interviewing of suspects to show a possible moderating factor which may be pertinent to understanding cooperation within actual police interviews.

Chapter 5 : Discussion: General overview, future directions and conclusions

Although suspect interviewing has advanced from historical practices (Leo, 1996; see Poyser & Milne, 2011 for further discussion) there are still issues to address in terms of best practice when interviewing suspects. Initially, this thesis reviewed the literature on interviewing of suspects (see Chapter 1). Laboratory research, systematic reviews and field studies suggest that: certain techniques are unethical and coercive (e.g. the Reid technique; Leo, 1996; King & Snook, 2009; see also Gudjonsson et al., 2006) and increase the likelihood of obtaining a false confession (e.g., Kassin & Kuechel, 1996; Redlich & Goodman, 2003; Russano et al., 2005); individuals hold false beliefs not supported by empirical data about valid cues to deception (DePaulo et al., 2003; Masip & Herrero, 2012) and confirmation biases toward guilt when interviewing (e.g., Holmberg & Christianson, 2002; Kassin et al., 2003; Meissner & Kassin, 2002); and alternative methods that promote free recall via the use of open-ended questions lead to more information from interviewees (reviewed in La Rooy et al., 2010). Although the study of suspect cognition during interviews may share parallels to the study of eyewitness cognition during interviews, such as the extent to which episodic memory is reconstructed versus consistent over time, relatively little work has examined the processes involved in repeated interviews of suspects which is a possible oversight for best-practice recommendations for future suspect interviews. This thesis presented the first systematic examination of a repeated interview of a high-profile suspect. A related laboratory experiment examined reminiscence over a short (one-day) time delay and factors that may alter cooperation with an interviewer when describing a prior (minor) transgression, as indexed by more new information presented within a proxy for a written testimony.

Findings of a case study of a repeated interview with a suspect of murder in the USA indicated that the suspect showed reminiscence with new, previously un-recalled information incorporated in the second and third recall attempts. The use of question types by the interviewers was also examined revealing that, although open-ended invitations were the least-used question type, they yielded the most information from the suspect (almost four times as much information as the other question types). These results suggest that although suspects may

have different motivations to victim/witnesses (i.e. the motivation to deceive in fear of imprisonment and/or social condemnation; see Gudjonsson & Petursson, 1991 for further discussion), there may be commonalities in the cognitive processes which underlie the recollection of an event to police. Additionally, the suspect gave no information which directly contradicted what he had already said, indicating that he had a clear memory of the event and just needed a chance to freely recall it with the help of certain question types (i.e. invitations) in order to give the police more information. Specifically, this case study shows that the suspect's first recall attempt (a written statement taken on the day of the crime) did not represent a full version of events as two subsequent recall attempts yielded new information which was not present in the written statement. This highlights the importance of repeated interviews with suspects in order to maximise the amount of information that the police obtain about a crime. This research complements other work on reminiscence during repeated interviews of eyewitnesses (La Rooy et al., 2005; La Rooy et al., 2010; Orbach et al., 2011).

Although some concern has been raised over the possibility of an increase of misinformation across repeated interviews when suggestive questioning techniques are used (see La Rooy et al., 2010 for discussion), the use of open-ended questions wherever possible can alleviate this. The results of the case study show that invitations were the least used question type by the interviewer (only 4 open-ended questions were used across the two interviews compared to 29 confirmatory questions; 17 option-posing and 13 directives). Despite this, these 4 invitations yielded the most information from the suspect (nearly 4 times the amount of information yielded from any other question type). These results are consistent with other field experiments of suspect interviews which show that despite the low use of invitations in suspect interviews they yield more investigation-relevant information (see Oxburgh et al., 2014) and more information overall (Snook et al., 2012) than other question types. This is because directive and option-posing questions ask the suspect for specific answers which tend to be much shorter responses than the free-recall that open-ended invitations elicit (Lamb et al., 2007; Lamb et al., 2011). It is worth noting that there were no suggestive questions used in either of the two interviews coded in the case study. Additionally, the recommendation of the interviewee speaking for the majority of the interviewer ('the 80/20 rule') was also followed in this case with the

suspect's speech comprising the majority of the substantive parts of the first (90%) and second interviews (82%). These findings indicate that the interviews involved in this case study were of a relatively high standard, although more invitations could have been used. Moreover, there was no use of the Reid technique or any of its minimisation/maximisation tactics. This is because the suspect had already confessed to the crime prior to being interviewed (i.e. he was relatively cooperative).

This particular suspect readily confessed to the crime and did not invoke his right to silence. It is probable that such high levels of information and reminiscence would not have been seen had the suspect not been willing to talk. Specifically, the high levels of cooperation seen with this suspect had implications on how much information he was willing to give. As he was claiming self-defence as reason for the murder he was keen to give as much information about the event in order to try and prove this point. In light of this, it is interesting to consider factors which may affect a suspect's cooperation during interview.

In chapter 3, a laboratory experiment examined the use of a subtle prime to being watched in order to increase cooperation when recalling a prior moral transgression. Results indicated that the presence of a web camera to make the participants subconsciously think that they were being watched heightened the level of reminiscence seen at the second session by 12%. This can be explained by considering research on the evolutionary processes that shape human cognition. For example, it is suggested that humans cooperate with each other in the hopes of indirect reciprocity (Nowak & Sigmund, 2005). There is evidence to suggest that this is heightened with cues to be being watched by others ('the watching eyes effect' Bateson et al., 2006). In this experiment, participants who were in the presence of a web camera cooperated more with the experimenter than those who were not in the presence of a web camera by providing more new information at session two that did not contradict their account from the first session.

These results indicate that by increasing cooperation, more information can be gained across repeated recall attempts. Specifically, new information which was not previously reported can be given in later recall attempts when the suspect is cooperating more. Field research indicates that using a friendly manner to establish rapport (Holmberg & Christianson, 2002) and using empathy

(reviewed in Oxburgh & Ost, 2011) can increase the cooperation of a suspect resulting in a higher chance of confession and ultimately more information gained. In Chapter 3, the participants were not actually interviewed so this could not be done, however, the findings suggest that the presence of a subtle cue to being watched can increase cooperation leading to an increase in new information. In terms of the practical implications of these findings, a prime to being watched (i.e. a camera/two-way mirror/person present) during the time that a suspect is writing his/her written statement may increase their cooperation in the first instance and then subsequent interviewing could use rapport and empathy to build on this. Additionally, in this experiment the watching eyes effect was pervasive across sessions too (i.e. participants in the eyes condition provided more information in general than the control participants across both sessions). This suggests that a prime to being watched during a written statement could increase the amount of information that the suspect gives more generally across multiple recall attempts. This prime to being watched does not necessarily have to be images of eyes or a camera however, as research has shown that the presence of another person can diminish the watching eyes affect as this is thought to override any primes to being watched (Ernest-Jones et al., 2011; Powell et al., 2012). In sum, this suggests that the presence of cues to being watched or a person being present while a suspect is writing his/her written statement could increase cooperation and lead to high amounts of information across multiple recall attempts.

There are some potential limitations to this work. In both experimental chapters there was a small time delay between the interviews (about 24 hours). In real life investigations, this is not always the case with much longer time delays between interviews in some cases. Research indicates that reminiscence is stronger for shorter time delays (e.g. see Gabbert et al., 2012; La Rooy et al., 2010; Odnot et al., 2013). That is, higher levels of reminiscence are found when the time between interviews is shorter. This is due to the memory trace fading over time resulting in the benefit of repeated recall attempts diminishing with larger gaps between interviews. This could explain why such high levels of reminiscence were found in both experimental chapters. Nonetheless, new information was reported in the second (and third) recall attempts showing that reminiscence can be seen in repeated recall attempts with suspects/people recalling a prior transgression. This may have been accentuated in part by there

being short time delays between interviews. Another limitation of this work is that it is difficult to generalise results from a case study. The case study in this thesis was an exploratory examination of repeated interviews of a real-life suspect and the memory processes at play during repeated recall attempts with a suspect and served to create a testable hypothesis for a laboratory experiment (increasing cooperation can increase reminiscence). It may be difficult to generalize results from this experiment to the field, as participants were recalling a transgression rather than a crime and did not have to lie. The results of this study are best viewed in terms of how increased cooperation may help investigators who need as much information as possible about a crime.

This thesis shows that cooperative suspects can behave similarly to victims/witnesses in terms of the underlying memory processes when repeatedly recalling an autobiographical event. Results suggest that this could be mediated by how cooperative the suspect is. This work implicates cooperation as an important factor for consideration when attempting to retrieve high levels of information from a suspect. Although further research is necessary given some of the limitations mentioned above, this work has highlighted the importance of cooperation during repeated interviews of suspects and has shown that the use of a subtle prime can contribute to higher cooperation. Additionally, this thesis has extended previous research on the different question types used during forensic interviews.

Future directions for research

Despite these limitations, the results of this thesis can provide ideas for novel areas of research within investigative interviewing. In chapter 4, the time of the memory that the participants were writing about was not controlled for. This resulted in some participants writing about events which took place from early childhood while others wrote about events that occurred relatively close to the first recall attempt. It would be interesting to test experimentally whether time of event is a moderating factor. For example, explicit instructions to remember a transgression from childhood versus one from recently. This might tap into the strength of the effect over time. It would also be interesting to see if asking participants to recall a staged event (i.e. ask them to 'steal' something) would

make any difference on levels of reminiscence. In this way, time delay could be controlled for as well. Finally, a replication of chapter 3 in the setting of an interview instead of written transcript may be interesting. For example, the first session could be similar to chapter 3 (writing about event in private with or without web camera) and then the participants could be interviewed about the event the next day (and possibly once more as well). In this way it may be possible to extend the findings to an actual interview setting instead of written statement. Additionally, this would allow for an examination of the use of different question types on levels of reminiscence.

Conclusions

Collectively, the results this thesis, in light of the previous research (reviewed in chapter 1), highlight three important aspects of suspect interviewing. Firstly, similar to victim/witness interviews, open-ended invitations yield the most information from suspects of crime despite their low use. Secondly, similar to interviews with victims/witnesses, reminiscence can be seen across repeated recall attempts with suspects reporting new details in later interviews and therefore increasing the amount of information that they give to the police. Thirdly, facilitating the level of cooperation that a suspect gives can heighten the level of reminiscence, again maximising the amount and type of information that may be obtained from real interviews. Repeated interviews can increase the amount of information given as reminiscence occurs. Reminiscence can be heightened by increasing the cooperation of the suspect through the use of a prime to being watched. In sum, interviews with suspects should be approached in a similar way to interviews with victims/witnesses with the aim being to obtain as much information about the crime as possible.

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Appendices

Appendix 1

School of Social and Health Sciences Application for Ethical Approval

Section 1: Checklist and Declaration

Title of Project: George Zimmerman Case Study

Project type: RESEARCH POSTGRADUATE

Name of researcher(s): Leah Scott

Name of Supervisor (if appropriate): Dr David La Rooy

	YES	NO
Is your research based solely upon reviewing existing literature?		x
If YES, will you be accessing literature that could be sensitive or potentially damaging to the University's reputation?		
If NO, would you like your ethical submission to be expedited? If so, there is no need to include additional paperwork other than signing this form.		

If your research is not a literature review, or you are accessing potentially sensitive literature then you must make a full submission as normal.

	YES	NO	N/A
1. Will you describe the main experimental procedures to participants in advance, so that they are informed about what to expect?			x
2. Will you tell participants that their participation is voluntary?		x	
3. Will you obtain written consent for participation?		x	
4. If the research is observational, will you ask participants for their consent to being observed?		x	
5. Will you tell participants that they may withdraw from the research at any time and for any reason?		x	

6.	With questionnaires will you give participants the option of omitting questions they do not want to answer?			x
7.	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?		x	
8.	Will you debrief participants at the end of their participation (i.e. give them a brief explanation of the study)?		x	

If you have ticked No to any of Q1-8, you must ensure that the reasons for this are made explicit in your project proposal.

		YES	NO	N/A
9.	Will your project involve deliberately misleading participants in any way?		x	
10.	Is there any realistic risk of participants or researchers experiencing either physical or psychological distress or discomfort? If yes, give details on a separate sheet and state what you will tell them to do if they should experience any problems (e.g. who they can contact for help).		x	

If you have ticked Yes to Q9 or Q10 you must ensure that the reasons for this are made explicit in your project proposal.

		YES	NO	N/A
11.	Does your project involve work with animals? If yes, you should also investigate whether you require a home office licence? Provide the answer to this in your proposal		x	
12.	Do participants fall into any of the following groups? If they do, refer to professional body guidelines and include some reference to these in your proposal.	Children (under 16 years of age)		x
		Schoolchildren of all ages		x
		Any person who may have difficulty understanding information provided to them		x
		Patients		x
		People in Custody		x
	People engaged in illegal activities (e.g. drug taking)	x		

Declaration:

- I am familiar with, and will follow, the University of Abertay's Code of Good Practice in Research
- I am familiar with, and will follow, the governing body of my field's own ethical guidelines.

School of Social and Health Sciences

Application for Ethical Approval

Section 3: Project Proposal

Estimated Start and completion dates:
March 2015 -

Aims of study and Rationale (500 words maximum): <i>Provide an overview of why the research is being suggested, what the researchers aim to achieve, and what impact this may have. Researchers are encouraged to write this as a lay summary.</i>
This is a case study on the investigation into the murder of Trayvon Martin by George Zimmerman in 2012. Specifically we will be looking at the forensic interviews that were carried out during the investigation in order to gain a better understanding into how any specific interviewing techniques may have affected the outcome of the case. The consistency of information provided by the suspect will be assessed.

External Partners: <i>List any organisations or partner groups to be involved in the proposed project.</i>
Michael Lamb - The University of Cambridge

Expertise: <i>Where appropriate make a statement about the qualifications/expertise of the researcher. For example, if the researcher is providing counselling, using clinical psychometrics, taking blood etc.</i>

Method:
Participants <i>State the maximum number of participants you will recruit. Provide a description of the participants, including recruitment methods, age, exclusion/inclusion criteria, and any other relevant demographic information.</i>
The participants are the police officers conducting the interviews and the suspect being questioned. They will not be made aware of their participation in this study, however as this case is already closed all of the material that will be used is available to the public.

Materials &/or apparatus

Describe the materials & apparatus that you need to conduct your study. You should name any specific tests, questionnaires and software that you are using. If conducting interviews either a list of questions or themes that will be discussed must be provided.

A computer to view the interview videos and to transcribe and code them.

Procedure

Fully describe each stage of how your proposed study will be carried out.

Transcribing will be done by typing up the interviews verbatim. The interview transcripts will then be coded for information regarding consistency of statements made by the suspect and any specific techniques used by the police officers.

Appendices

Please attach all other relevant documentation required for this study. For example: participant information sheets, informed consent forms, questionnaires, interview schedules.

JM/NMc/CR/SHS_R_2014-15_22

17th March 2015

Dear Leah

George Zimmerman Case Study

This is to notify you that the Ethics Committee have looked at your submission and you have been granted **full ethical approval** to collect data for your project as entitled above. This is subject to the following standard conditions:

- i You must remain in regular contact with your project supervisor

- ii Your supervisor must see a copy of all experimental materials and your procedure prior to commencing data collection

- iii If you make any substantive changes to your project plan you must submit a new ethical approval application to the committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be resubmitted through the Research Ethics Blackboard course.

- iv Any changes to the procedures must be negotiated with your supervisor

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

The Committee observed that this proposal is ethically sound given that the material is in the public domain through internet access and they are satisfied that you have access to a supervisor who can offer support should you be affected by the material.

Should you have any queries please contact your Supervisor.

Yours sincerely

School Ethics Committee

School of Social & Health Sciences

Appendix 2

Research Ethics Approval Application (Form Ethics 1)

Complete all sections as required and follow the instructions at the end of the form.

You must complete this form electronically – do not handwrite it.

Completed forms to be submitted via your School's Research Ethics Blackboard Page.

Important: You must submit only one document. Should you need to submit anything in addition to the information requested in this form, please paste it at the end of this form as an appendix. If you have any questions about this form, please contact your school office.

A – Applicant Details – Everyone should complete this section.

A1	Name of Project Proposer:	Leah Scott
A2	Matriculation No. (where appropriate):	██████████
A3	Abertay email address:	██████████@live.abertay.ac.uk
A4	Name of Supervisor (where appropriate)	Dr Christopher Watkins
A5	Name of Programme (where appropriate):	MBR
A6	Module Code (where appropriate):	

B – Project Details – Everyone should complete this section

B1	Project title: Do reputational concerns have a direct-effect on repeated recall of a prior transgression?	
B2	Main aim of project: The project will extend my current case study with an empirical investigation into the behaviour of potential suspects in repeated interviews. I will test whether experimentally-activating concerns for one's reputation (the subtle known presence of a webcam while writing about a prior transgression) directly-alters aspects of testimony studied in my prior thesis chapter.	
B3	Proposed start date: 02/2016	Proposed end date: 04/2016
B4	Site of Research. <i>Abertay (Division of Psychology)</i>	

		YES	NO
B5	Is the proposed research based only upon reviewing existing literature?		x

B6	If YES, will you be accessing literature that could be deemed sensitive? If Yes, and your study ONLY involves Literature Review complete Section F and then progress to Section H.		
B7	If you answered NO to B6 (indicating the literature is not sensitive), would you like your ethical submission to be expedited (i.e. approved without further scrutiny)?		X

If you answered YES to B7, leave sections D—H blank and go directly to Section I.

Section C External projects

If your project is conducted fully or partly outside Abertay you may require approval from other ethical approval bodies. If so, complete Section C, if not, Go to Section D.

C1	Name of external ethical approval body:			
C2	Application Status (chose one):	Approved	Pending	Declined
C3	Reference:			
C4	Date Submitted:			

Please note that, in the case where an application has to be made to an external ethical approval body, approval from both this body and the School's Research Ethics Committee are required.

Section E Studies with Human Participants

Only complete Section E if your study involves human participants.

Please confirm that:

		YES	NO
E1	You will describe the main experimental procedures to participants in advance, so that they are informed about what to expect?	X	
E2	You will inform participants that their participation is voluntary?	X	
E3	You will obtain explicit informed consent for participation, or assent in the case of questionnaire use?	X	
E4	If the research is observational, you will ask participants for their consent to being observed?	N/A	

E5	You will tell participants that they may withdraw from the research at any time and for any reason?	x	
E6	With questionnaires you will give participants the option of omitting questions they do not want to answer?	N/A	
E7	You will tell participants their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs unless they explicitly consent to be identified.	x	
E8	You will debrief participants at the end of their participation (i.e. give them a brief explanation of the study)?	x	
E9	You will NOT deliberately mislead participants in any way?		x
E10	Your study will NOT involve a realistic risk of participants or researchers experiencing either physical or psychological distress or discomfort		x

If you have ticked No to any statement you must ensure that the reasons for this are made explicit in Section G.

			Yes	No
E11	Do participants fall into any of the following groups? If they do, refer to professional body guidelines and include some reference to these in Section G.	Children (under 16 years of age)		x
		Schoolchildren of all ages		x
		Any person who may have difficulty understanding information provided to them		x
		Patients		x
		People in custody		x
		People engaged in illegal activities (e.g. drug taking)		x
		Other vulnerable group. Describe:		x

If you have completed Section E, go to Section G

Section F Studies Not involving human or animal participants or samples.

Only complete this Section if your study does NOT involve human or animal samples or participants.

Please describe briefly how you would plan to execute your project, giving details of your proposed methodology, and then progress to Section H.

Section G Details of Proposed Research (if applicable)

G1	<p>Aims of study and Rationale: <i>Provide an overview of why the research is being suggested, what the researchers aim to achieve, and what impact this may have. Write this as a summary for non-expert readers.</i></p>
<p>Evidence-based protocols and best-practice for interviewing witnesses or victims of crimes (e.g., Lamb et al., 2007) are only just beginning to be applied to the study of suspect behaviour during repeated interviews. My initial research of a high-profile case study of the testimony of a suspect to murder (<i>The State of Florida vs George Zimmerman</i>) suggests that repeated interviewing increased reminiscence in the suspect gradually over time, with approximately 1 third of details over his second and third testimony not reported during prior testimony. Moreover, almost two thirds of the information recalled in his second and final testimony was consistent with prior testimony. Specific lines of questioning appear to have shaped his testimony over time. For example, while option-posing questions facilitated the greatest proportion of information from the suspect over time, they facilitated both reminiscence and consistency over the first interview. By contrast, invitations tended to facilitate consistency in the suspects response over time, while yielding the greatest proportion of both new and consistent information in his second and final interview. Indeed, while the greatest overall yield was obtained from the suspect over time and during the second interview in response to invitations (~4 times the average length of response to each interview question), they only yielded one fifth the response from the suspect during the first interview (at the scene of the crime) in contrast to confirmatory questions (~2.5 times the average length of response to each interview question). Collectively, these findings support the utility of testing for reminiscence and consistency among suspects across time and in response to different lines of investigation from interviewers, with evidence from the field suggesting that the interviewer shapes suspect testimony.</p> <p>Here, I wish to extend this evidence from the field and carry out one of the first empirical studies, to my knowledge, to test for the extent to which one’s description of a prior (minor/non-legal) transgression changes or is consistent over time. Specifically, and given potential ethical issues with this line of research, I intend to test this in response to an invitation to recall a past event privately within a lab setting (i.e. a handwritten task and not an interview). With suspect interviewing, the lay belief that consistent evidence over time has greater veracity (Granhag & Stromwall, 1999) is misguided if there is a premium on <i>guilty</i> suspects maintaining their reputation over time which, in turn, motivates greater consistency in their testimony (Granhag & Stromwall, 1999, 2001, 2002, Granhag, Stromwall & Jonsson, 2003). Indeed, individuals deceive one another, in part, to maintain their reputation in spite of transgressions, which requires a great degree of cognitive effort over time (see Sip et al., 2007 for discussion on impression management and deception). Past research has activated reputational concerns experimentally by the simple presence of subtle cues to being watched (i.e. the ‘watching eyes effect’, Nettle et al., 2003), demonstrating that these cues increase cooperative behaviour in both real world and laboratory settings (Bateson et al., 2013). If this is the case, there are two alternate hypotheses about activating reputational concerns experimentally and recall of a transgression over time. If reputational concerns facilitate impression management among people who have committed a prior transgression (i.e. <i>regardless of one’s concerns about social norms</i> (see Bateson et al., 2013 for</p>	

discussion), then we would predict that cues to being watched enhance *consistency* over time compared to when these cues are absent. If, by contrast, reputational concerns promote more cooperative behaviour among people who have committed a prior transgression (i.e. *in light of* one's concerns about social norms, see Bateson et al., 2013 for discussion) then we would predict that cues to being watched enhance *reminiscence* over time (i.e. recalling new previously-un-recalled information).

G2 External Partners:

List any organisations or partner groups to be involved in the proposed project.

G3 Expertise:

Where appropriate make a statement about the qualifications/expertise of the researcher (or planned training). For example, if the researcher is providing counselling, using clinical psychometrics, taking blood, working with samples, working with vulnerable groups etc.

I have over 5 years' experience in the conduct/dissemination/analysis of research on social judgements of faces. The student has received training from her external advisor (Dr La Rooy, Royal Holloway) on coding transcripts for data analysis.

	Method:
G4	<p>Participants <i>State the number of participants you intend to recruit. Provide a description of the participants, including recruitment methods, age, exclusion/inclusion criteria, and any other relevant demographic information.</i></p> <p>Forty individuals will take part (20 male, 20 female) and will be recruited via word of mouth, flyers and the SONA system for research credit.</p>
G5	<p>Materials &/or apparatus <i>Describe the materials & apparatus that you need to conduct your study. You should name any specific tests, questionnaires, etc. that you are using. If conducting interviews either an indicative list of questions or themes that will be discussed must be provided.</i></p> <p>See appendix for consent form and task instructions.</p>
G6	<p>Procedure <i>Fully describe each stage of how your proposed study will be carried out. Remember to list your chosen methodology or methodologies.</i></p> <p>Participants will be recruited to take part in a two-part study with the second session scheduled on the following day. Participants will be (unknowingly) randomly-allocated either to the 'eyes-watching' condition (presence of a laptop with web-camera on) or the 'no-eyes' condition (laptop turned-on but closed). In the task instructions, participants will be informed that we would like them to think of a time in the past where they committed a moral transgression that nobody found out about and to recall and describe this episode in as much detail as possible for 15 minutes. Specifically we will ask them to recall the incident in as much detail so that two actors could, in theory, re-enact the episode. Participants will be asked to describe their thoughts and feelings at the time and the thoughts and feelings of the person whom they were with where applicable. They will be assured that we are not asking them to reveal any behaviour that is illegal or could be considered illegal and that they should only describe an incident that they feel comfortable talking to us about. After receiving the task instructions, the experimenter will enact a short 'cover story'. The experimenter will draw the participants' attention to a laptop at the side of the main PC. She will reinforce to participants that another student is using the laptop for a separate experiment, ask that they do not move the laptop during the study and assure the participant that they are not being recorded even though the web camera is currently on. In the control condition, the experimenter will provide the same cover story but the laptop will be closed (i.e. "please don't move the laptop"). The experimenter will then leave the room and allow the participant to spend up to 15 minutes writing. In the second session, participants return the following day and complete an identical study without the presence of the computer (in order to test for effects of the experimental manipulation over time). Participants will be asked to write about the exact same episode they described previously. In both sessions the episode will be handwritten on a piece of paper, put into an envelope and sealed by the participant before</p>

	being handed to the experimenter. Participants will then be debriefed about the specific purpose of the study.
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Appendices

Where available, please attach all other relevant documentation required for this study as an Appendix to this form. For example: participant information sheets, informed consent forms, questionnaires, interview schedules.

Section H – Ethical Issues

What ethical issues (if any) does your project raise? How will you mitigate against these ethical issues? **Do not** leave this section blank; if you are certain that there are no ethical concerns with this research, then you must explicitly justify this here.

(See “Ethics: a Quick Guide” for guidance on potential ethical concerns.)

H1	<p>This project may have ethical concerns as we are asking participants to reveal a prior (previously secret) moral transgression in detail. However we feel that the ethical risks associated with the research project have been mitigated. Participants are made fully aware of the nature of the commitment to the study across the two sessions. Moreover, we make explicitly clear that we are interested in investigating moral (rather than legal) transgressions and provide an example of a transgression that is benign from a legal point of view. From the point of view of the research, the aim is to test consistency and reminiscence (i.e. new information) over time – the nature of the transgression that they describe is not of interest to the specific research question.</p> <p>Providing participants with a cover-story (i.e. the presence of the laptop) may cause concern for participants. However, within the protocol the researcher will explicitly demonstrate that the webcam is not recording the participant in any way and has merely been left on in the background for the student (who is sharing the lab) to use after testing. Any potential ethical concerns will be fully addressed in a verbal and written debrief. Here, we will emphasise the societal benefits of this research and that investigating behaviour in a relatively benign context (e.g. students writing about moral transgressions in a laboratory setting) is one of the only practical and ethically feasible ways to investigate wider issues of greater societal significance (e.g. suspect behaviour over time when providing testimony versus how people <i>generally</i> recall past transgressions over time). The debrief will contain contact information for organizations should the participant feel concerned after having taken part in our experiment.</p>
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Section I Confirmation/Declaration

Place an X in each box to confirm you agree with the statement.

	Yes
I am aware I need to submit a Risk Assessment and will do so before commencing the proposed study. (Note: you must follow whatever procedures your School has in place for the review and	X

approval of risk assessment. Seek advice from your supervisor). Note, all studies except Literature Reviews must complete an appropriate risk assessment prior to commencing the study.	
I have read and understood Abertay University's policy on research ethics ("Ethics: a Quick Guide"), the Abertay University Health and Safety Policy, and any equivalent School Policy.	X
For each working location (including university facilities and your home), I will identify what to do and who to contact in case of emergency, and will make yourself aware of any existing safety, First Aid or emergency procedures.	X
Any data collected from experiments will be stored securely within a week in Abertay University facilities following the guidance set out in the University's Data Storage Policy.	X
I understand that it is my responsibility to ensure compliance with any relevant regulatory or legal requirements (such as data protection legislation, stored tissue regulations, animal experimentation licensing, etc).	X
The proposed study will not discriminate against participants on the grounds of race, sex, religion or belief, sexual orientation, disability, pregnancy and maternity, gender reassignment, marriage and civil partnership, and/or age.	X
I have completed all sections of this form fully and accurately	X
I understand that should I receive a Conditional Approval, you will need to comply with the Conditions set out in the Decision email.	X
I understand that should I receive a Rejection, I will not be permitted to conduct any work on your proposed project. In such circumstances I will meet with my supervisor to discuss submitting an alternative proposal or one that addresses all the concerns raised in the review.	X
I understand that should I subsequently amend my study after approval has been given I will be required to inform the ethics committee of the change, and that changes that materially affect the study may require a further submission for ethical approval.	X

If you are an **undergraduate or postgraduate student**, please also confirm that:

	Yes
Your supervisor (as named in A4) has read and approved this completed form.	x

Your supervisor will approve any materials that you provide to human participants before use (e.g. consent forms, questionnaires, interview questions).	x
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What to do next

Having checked that you have fully completed this form submit it in electronic form to the School Research Ethics Blackboard page.

Remember, you must submit only one document. Any information you wish to submit as part of your proposal other than that requested above can be cut and paste below.

Confessions and recall of life events over time: Study information and consent form

Please read the instructions here carefully. It is important that you understand what is involved in this task before you indicate your consent to take part.

A great deal of research has explored human memory and the way in which we recall and interpret prior events in our life over a period of time. By taking part today, you are helping us to explore topics in human memory that are of great societal importance.

This laboratory experiment requires that you take part in two test sessions each lasting approximately 20-30 minutes and spaced one day apart from each other. On both sessions you will be asked to spend up to **15 minutes writing** (privately and to yourself) about a prior **transgression** in your life. By transgression we mean something that could be described as *wrong, a misdeed, an indiscretion, something mischievous or an example of misbehaviour*. Specifically, we would like you to think and write about a transgression that you **'got away with'** (i.e. nobody found out about it).

To be absolutely clear at this point, in this study we are not, at any point, asking you to reveal anything that could be described as, or perceived as, illegal – all of your responses are anonymous and treated in the strictest confidence – we are asking you to think about and write about a moral transgression (rather than a legal transgression). For example, 'getting-away with' lying to someone or misleading them into thinking something was true when it was not would be a transgression in this sense.

The second session will be identical to the first session (you will be asked to write about the same event). On both sessions we would like you to recall, as vividly as possible, the event at the time, your thoughts, feelings and actions and the thoughts, feelings and actions of the other person where applicable. Please provide as much detail as possible so that, in theory, the event could be re-enacted exactly in the way you describe it.

Please note (if you give your consent to take part today):

- You can withdraw from the project at any point and without penalty if a certain aspect of the study makes you feel uncomfortable.
- All of your responses are anonymous and treated in the strictest confidence. Data are stored securely by the student and her supervisor and your responses cannot be linked back to you personally.
- You will not at any point be interviewed by the experimenter or asked to reveal anything from your past which was illegal or could be perceived as illegal. You will be asked, on both sessions, to write about the same event for up to 15 minutes privately and to yourself (while the experimenter is out of the room).
- You will have opportunities to ask questions during or after the study either by contacting the experimenter (Leah Scott) or her supervisor (Dr

Christopher Watkins). A full debrief on the purpose of the research will be provided at the end of the second session.

- Any scientific publications that arise from our lab make no reference to individuals in ways that could compromise the anonymity of those taking part in our research.

I give my consent to take part in this two-part laboratory study conducted by Leah Scott (Supervisor Dr Christopher Watkins,

_____ :

Name (please print):

Date:

Signature:

Date of Birth: _____

******IT IS ESSENTIAL TO FILE THIS FORM******

Confessions and recall of life events over time: Debrief form

Thank you very much for taking part in my research! Your time and effort are invaluable to my research, which is being carried out in fulfilment of a postgraduate qualification (Masters by Research degree).

The purpose of this experiment was to test a phenomenon known as the 'watching eyes effect' (Bateson et al., 2006 *Biology Letters*), where knowing that you are observed by someone, even subtly, is said to promote cooperation through concern of our reputation. In this experiment, you were either allocated to the experimental condition (webcam switched on but not recording you) or the control condition (computer turned-on but closed). This experimental measure was used to 'activate' mere thoughts that other people may be observing your actions. Prior research suggests that signals to being watched might enhance cooperation because we want to maintain a positive reputation among those whom we interact with (e.g. picking up litter to be a good citizen in general). A subtle alternate possibility which has been tested and also receives support is that being watched matters but only in situations where we are violating a particular social norm (e.g. pick up litter in a neighbourhood where cleanliness is valued but not do so in an environment where it would make less of a difference to the neighbourhood – Bateson et al., 2013 *PLoS One*). This research is testing these two alternate possibilities related to how people, in general, may recall a prior transgression over time. Your anonymized data will be coded and I will measure **consistency** in your account across sessions and **reminiscence** (i.e. incorporation of new information) at session two, in order to test whether or not being watched increases/decreases consistency and reminiscence across your two statements.

Participation in this research is invaluable as it can reveal how people might generally think/behaviour when reporting a transgression – which is important for understanding testimony provided by suspects to serious crimes. As research on suspect behaviour and confessions can be ethically and practically

challenging, your participation will help us to answer questions that may have more serious consequences in real-world contexts such as suspect interviewing (e.g. when records of one's behaviour are available).

Please feel free to ask either myself or my supervisor if you have questions about this research project. If taking part in this project has raised any concerns for you personally, you may find the following contacts helpful:

Student Counselling service (counselling@abertay.ac.uk, 01382308051)

Samaritans confidential helpline (Freephone number, 116 123).

Thanks again for taking part! We appreciate if you do not discuss this study with your peers so that the results of our research are reliable.

Leah Scott [REDACTED] ([@live.abertay.ac.uk](mailto:[REDACTED]@live.abertay.ac.uk))

Dr Christopher Watkins (Supervisor, [REDACTED])

Project Reference Number: SHS_T_2015-16_880

Project Title: **Do reputational concerns have a direct-effect on repeated recall of a prior transgression?**

Proposer: **Leah Scott**

Matriculation number: [REDACTED]

Programme: , Stage

Supervisor: Christopher Watkins

The above Project has been granted **Full ethical approval**.

Additional Conditions:

The amendments made in the second submission now permit full approval to be given.

NB: you are not required to resubmit your application if you have been given Additional Conditions.

Standard Conditions:

These apply to all Research Ethics applications

i The Proposer must remain in regular contact with the project supervisor.

ii The Supervisor must see a copy of all materials and procedures prior to commencing data collection.

iii If any substantive changes to the proposed project are made, a new ethical approval application must be submitted to the Committee. Completed forms should be resubmitted through the Research Ethics Blackboard course.

iv Any changes to the agreed procedures must be negotiated with the project supervisor.

Failure to comply with these conditions will result in ethical approval being revoked by the Ethics Committee.

Research Ethics Committe