What's the Room Got to do with it? Examining the Influence of Environmental Aspects in Investigative Interviews

Doctoral Dissertation

by

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Declaration

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

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LIST OF ABBREVIATIONS

ANOVA: Analysis of variance

BF_{01}: Bayes factor, expressed as evidence in support of null hypothesis

BF_{10}: Bayes factor, expressed as evidence in support of alternative hypothesis

CI: Cognitive Interview

CM: Context manipulation

EVT: Expectancy Violations Theory

ICC: Intra-class Correlation

MANOVA: Multivariate Analysis of Variance

VR: Virtual reality

GENERAL ABSTRACT

The foremost goal in all investigative interviews is to elicit a complete and accurate account from interviewees. To achieve this, psycholegal research has provided investigators with a plethora of recommended tactics for creating an atmosphere that promotes the disclosure of information (e.g., through rapport-building; Abbe & Brandon, 2013), as well as optimal information-gathering questioning tactics (e.g., open-ended, non-suggestive questions; Clarke & Milne, 2001). While most of the literature on maximizing information disclosure has focused on the verbal and non-verbal communication between investigator and interviewee, little research has examined how the environment in which the interview occurs may help in eliciting information. The overarching aim of this thesis is to examine potential environmental influences on two key elements of investigative interviews (i.e., rapport-building and information disclosure), as well as explore overall perceptions about police interview environments from a variety of populations (i.e., general population, current detainees, and police investigators).

Specifically, across two experimental studies and two surveys, we examined whether an interview's environment could influence an interviewee's disclosure of information and perceptions of rapport-building. First, we examined physical spaciousness. In an experimental study, participants engaged in a virtual reality (VR) scenario depicting a crime and were interviewed as suspects in either a larger or smaller room, at a closer or longer distance. We found no links between room size and sitting distance on disclosure quantity or quality. However, participants interviewed in the larger room reported a more positive interview experience in terms of spaciousness, which consequently led to higher perceptions of rapport, compared

to those interviewed in the smaller room (**Chapter 2: The Influence of Room Spaciousness on Investigative Interviews**). We also examined different interview locations for a witness interview context. Participants experienced a VR mock crime, and one week later were interviewed in either their own homes – expected to elicit higher comfort – or in a formal room akin to a real-world police interview room. While participants in the home interview setting reported feeling more at ease and in control, we found no differences between interview location on the quantity and quality of information disclosure or participants' perceptions of rapport-building (**Chapter 3: Examining Witness Interviewing Environments).**

Next, we were interested in exploring individuals' thoughts and expectations regarding police interview rooms. While previous studies have suggested that a room made to be 'nice' and comfortable may be optimal for interviewing suspects, another study found it can instead lead to higher suspicion of the investigator's intentions. Therefore, we conducted a survey with current detainees and individuals from the general population who provided descriptive information about their preferences and expectations of police interview environments and compared photos of two rooms; one which resembled a "typical" interview room, and one decorated to be warm, inviting and comfortable. Overall, detainees and general population individuals reported expecting to be interviewed in the "typical" room, but to prefer the decorated one. The decorated room elicited more positive feelings of ease and comfort, and lower feelings of suspicion than the "typical" room (**Chapter 4: Detainee and General Populations' Thoughts on Police Interview Rooms**).

Further, to gain a more complete understanding of how contextual techniques are employed by practitioners in the field, we gathered police interviewers' thoughts

and knowledge about context (i.e. environmental related interviewing tactics) through an international survey. A sample of 81 police investigators completed the survey. Our findings provided evidence that investigators believe the interview setting to have importance, and investigators reported to already be employing some context manipulation techniques, particularly related to seating arrangement, investigators' clothing, and item availability for suspects (e.g., water, cigarettes). The findings from this survey demonstrated the need for future research to explore the influence of context on investigative interviews, especially as it is already recognised by investigators (**Chapter 5: Utility and Effectiveness of the Context Manipulation Techniques: Police Investigators' Perspectives**).

Lastly, in the **General Discussion (Chapter 6),** we summarize this thesis' key findings, presenting the challenges as well as suggestions for future research on investigative interviewing environments. We hope that this body of work serves as a foundation for future research in this limited, yet very practical aspect of interviewing practice.

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CHAPTER 1

GENERAL INTRODUCTION

This chapter draws from the following paper:

Hoogesteyn, K., Meijer, E.H, Vrij, A., Merckelbach, H.L.G.J (2018) Improving the disclosure of information in an investigative interview: Rapport building and the physical environment. *The Inquisitive Mind Magazine*, *36*/2018.

Introduction

One infallible trope of police television shows is that suspect interviews are always conducted in small, dark, dull rooms with one-way mirrors (i.e., *Law & Order* TV show). Although these depictions are fictional, investigative interview environments that promote intimidation, discomfort, and anxiety reflect reality. For example, a widely used interview protocol in North America – the Reid technique – functions under the premise that an intimidated, uncomfortable suspect is compliant and thus willing to confess (Kozinski, 2018; Meissner, Redlich, Michael, Evans, Camilletti, Bhatt, & Brandon, 2014). Nevertheless, while an intimidating interview environment appears conventional, whether it is actually effective has yet to be empirically established. Thus far, research examining the environment in which investigative interviews occur has received little attention, despite its high practical relevance. It is only recently that legal psychologists have begun to study whether the physical environment is influential during interviews, and if it can be used as a tool to foster cooperation and facilitate information elicitation. This thesis provides a step toward addressing this gap in the psycholegal literature. We aimed to examine if the interview setting can facilitate key aspects of investigative interviewing: Information-elicitation and rapport-building. The purpose of this chapter is to place this thesis in context by (1) summarizing the current scientific consensus regarding investigative interviewing approaches, and (2) discuss the available literature related to the physical environment and investigative interviewing practice.

Investigative Interviews

Through investigative interviews, investigators are able to collect critical information (e.g., potential leads) and evidence toward the advancement of a criminal

case. For this reason, the foremost goal of all interviews is to elicit a complete and accurate account from the interviewee (Shepherd & Griffiths, 2013; Vrij, Hope, & Fisher, 2014).

Two main styles of interviewing dominate the field: the accusatorial (prominent in North America (e.g., exemplified in the Reid technique) and information-gathering (prominent in the United Kingdom). While both interviewing styles aim at eliciting cooperation from the interviewee, their approaches are fundamentally different (Vrij, Hope, & Fisher, 2014). An accusatorial style functions under the premise that the interviewee is guilty, and therefore the intention is to manipulate their belief about the consequences of confessing in order to obtain a confession (Kelly & Meissner, 2015; Vrij, Hope, & Fisher, 2014). Kassin and Gudjonsson (2004) summarized the three overall components of an accusatorial style: custody and isolation (i.e., the interviewee is detained in a small room, left to experience the anxiety and stress associated with a police interview); confrontation (i.e., the interviewee is assumed guilty and is told about the evidence against them, is warned of the consequences concomitant with their guilt, and is prevented from denying their involvement in the crime); and minimization (i.e., a tactic in which a sympathetic interviewer attempts to gain the interviewee's trust, offers them moral justifications or excuses for the crime, and implies more lenient consequences should s/he confess to the crime; Meissner et al., 2014). Since the goal of an accusatorial interview is to obtain a confession, the tactics used can be psychologically manipulative, seeking to establish control over the interviewee and relying on confirmatory questions (Meissner, Redlich, Bhatt, Brandon, 2012).

However, accusatorial methods can lead to the use of more abusive tactics by encouraging a harsher and control-based atmosphere in the interview room, potentially leading suspects to confess to crimes they did not commit (Brimbal, Kleinman, Oleszkiewicz, & Meissner, 2019). Over the past decade criminal investigations carried out in an accusatory manner have received substantial criticism due to the staggering number of false confessions resulting in wrongful convictions (and consequently Miscarriages of Justice). As of 2018, in the United States, 62% of the wrongful conviction murder cases involved a false confession (see https://www.innocenceproject.org/dna-exonerations-in-the-united-states/). Central to many of these false confession cases is the use of accusatorial methods (Meissner et al., 2012). For example, in the much publicized Central Park jogger case, five juvenile males served between six and 13 years in prison based on confessions that were later proven to be false. Prior to falsely confessing, the juveniles were subject to stressful and severe interviews lasting between 14 and 30 hours, and were led to believe that they could go home if they confessed (Nesterak, 2014).

Notably, besides increasing the chances of obtaining false confessions, accusatorial methods may actually elicit resistance rather than cooperation (Vrij, Meissner, Fisher, Kassin, Morgan III, & Kleinman, 2017). Research suggests that certain accusatorial tactics, such as emotional provocation and confrontation, can increase interviewees' resistance and refusal to cooperate (Goodman-Delahunty, Martschuk, & Dhami, 2014; Kelly, Redlich, & Miller, 2015). Such resistance is, predictably, counter-productive to the goal of obtaining accurate and useful information.

Thus, in light of the problematic nature of accusatorial methods, both academics and practitioners began advocating an information-gathering style to interviewing. In 1984 the Police and Criminal Evidence Act (PACE) was created, which limited the use of psychologically manipulative tactics and required all interrogations to be audio recorded (Bull & Milne, 2004a). Further, in 1993, the Royal Commission on Criminal Justice in the UK proposed the PEACE model, developed by a team of experienced detectives, in conjunction with the available empirical evidence on recommended interviewing methods (British Psychological Society, 2016).

The PEACE model includes five phases, each represented by a letter of the acronym. In the "Preparation and planning" phase, interviewers focus on consolidating the evidence and constructing a plan for the interview, this can also include choosing the location of the interview (Brandon, Wells, & Seale, 2018). In the "Engage and explain" phase, the goal is to build rapport and inform the interviewee of the purpose of the interview. The third phase, "Account" is the core of the interview, when the questioning takes place. The model recommends two interviewing protocols here: The Cognitive Interview (Fisher & Geiselman, 1992) for interviewing cooperating interviewees, and Conversation Management (Shepherd & Griffiths, 2013) for uncooperative interviewees. In the Account phase, the interviewer clarifies -and if needed challenges- the information provided by the interviewee. The following phase, "Closure" is when the interviewer summarizes what has been said throughout the interview. Lastly, in the "Evaluation", interviewers analyze their performance after the interviews are concluded. This phase emphasizes

the need for investigators to continuously work on improving their skills (Walsh & Milne, 2010).

The PEACE model underlined the shift from an accusatorial approach to an information-gathering approach. The latter approach emphasizes the development of rapport, explaining to the suspects the seriousness of the offense, and the need for honesty when requesting their version of events (Meissner et al., 2012). The information-gathering approach employs a neutral framework where the interview becomes a tool to gather information rather than to seek inculpatory evidence. The main goal thus shifts from obtaining a confession to gathering as much useful and reliable information as possible to advance the investigation (Evans, Meissner, Brandon, Russano, & Kleinman, 2010; Evans, Meissner, Ross, Houston, Russano, & Horgan, 2013; Hartwig, Meissner, & Semel, 2014; Vrij et al., 2017). One essential component of the information-gathering approach is *rapport and relationship building* (Kelly, Miller, Redlich, & Kleinman, 2013; St. Yves, 2009) – which is a main outcome of relevance throughout this thesis.

Rapport and Relationship Building

Rapport-building can be defined as a working and constructive relationship between investigator and interviewee (Walsh & Bull, 2012). It generally consists of personalizing the interview (Fisher & Geiselman, 1992), establishing a common ground, as well as engaging in active listening and attentiveness (Collins, Lincoln, & Frank, 2002). By building rapport, investigators are able create an atmosphere that encourages cooperation and supports the task of obtaining information (Abbe & Brandon, 2013; Evans, Brandon, Russano, & Kleinman, 2010; Hartwig, Granhag, & Vrij, 2005). Whilst through an accusatorial approach the investigator seeks control of

the interrogation, a rapport-building approach only works if investigators relinquish some of their control and share it with the suspect (Brimbal et al., 2019).

The positive effects of building rapport have been reiterated by academics as well as practitioners (e.g., Kelly et al., 2015; Russano, Narchet, Kleinman, & Meissner, 2014; Vallano, Evans, Compo, & Kieckhaefer, 2015). Studies show that rapport-building increases the likelihood and accuracy of disclosure from witnesses (Kieckhaefer, Vallano, Schreiber-Compo, 2014; Vallano & Schreiber-Compo, 2011, 2015), and suspects (Alison, Alison, Noone, Elntib, & Christiansen, 2013; Holmberg & Christianson, 2002; Snook, Brooks, & Bull, 2015; Wachi, Kuraishi, Watanabe, Otsuka, Yokota, & Lamb, 2018). An example of the benefits of rapport-building with suspects comes from the recent case of a British man arrested for planning to kidnap and murder a soldier. The man refused to cooperate during his interviews, stating that he would only talk "openly and honestly" to the "right person". After failing to elicit cooperation, a new investigator took charge, using a friendly approach: "[…] Only you know these things [suspect's name]. If you are willing, you'll tell me, and if you're not, you won't. I can't force you to tell me – I don't want to force you. I'd like you to help me understand. Would you tell me about what happened?". Faced with this approach, the suspect responded positively: "That is beautiful," he said. "Because you have treated me with consideration and respect, yes I will tell you now […]" (Leslie, 2017).

The Role of the Environment in Communication

Successful information elicitation largely relies on the interpersonal dynamic and quality of communication between the investigators and interviewees (Yeschke, 1997). While rapport has received substantial attention, one aspect of this dynamic

that has been largely unexplored is the environment in which the interview occurs (Goodman-Delahunty et al., 2014). Nevertheless, the physical environment can be influential, as contemporary communication research explains (Hartley, 2002; Knapp, Hall, & Horgan, 2013). Parallel to the lack of focus on the environment in the investigative interviewing literature, communication research has also neglected the environment until more recently. Hartley (2002) emphasized the importance of the environment in his model of interpersonal communication (see Figure 1), where *social context* encompasses the *social structure* of the communication (i.e., social norms, relationships), as well as the *environment* (which he then divides into social or/and physical environment). According to Hartley, the physical environment is the collection of physical aspects surrounding the communication, such as shape and size of the room, lighting, and colors. These aspects can then influence behavior in conscious and unconscious ways. He proposed the example of lighting, which is seemingly inconsequential. However, harsh lighting can lead to eye-strain or fatigue, which can then make people feel irritable or unsettled, and feeling irritable can lead to grumpiness, which in turn can lead to arguments during a conversation.

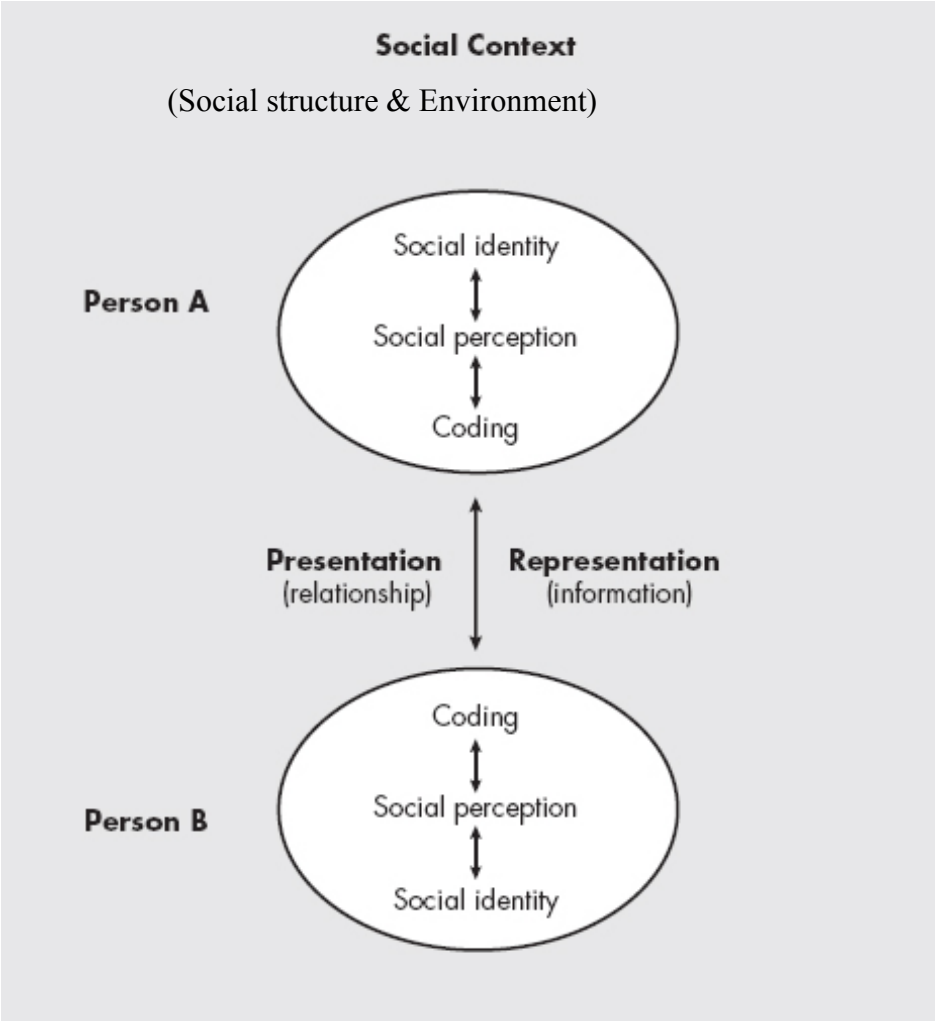


Figure 1. Hartley's (2002) model of interpersonal communication. Social structure and Environment added for this thesis' purpose.

Other researchers have also argued that different physical aspects can help create an atmosphere that facilitates communication and is conducive to obtaining information (Knapp, Hall, & Horgan, 2013). This has been examined in fields outside of [legal] psychology, such as in counseling and healthcare settings. Similar to an investigative interview scenario, the disclosure of accurate information from clients is vital for counselors to make appropriate diagnoses (Okken, Rompay, & Pruyn, 2013). For this reason, a number of health care-related studies examined whether alterations of the physical environment can facilitate client disclosure with their counselors (e.g.,

Cohen & Schwartz, 1997; Lecomte, Bernstein, & Dumont, 1981). Such physical aspects can be architectural, such as the room size. Across two studies, Okken, Rompay, and Pruyn (2012, 2013) found that clients interviewed in a larger room provided more information about sensitive topics and felt more positive feelings of comfort than clients interviewed in a smaller room. They also found that a larger interpersonal distance between interviewer and clients facilitated higher disclosure for some topics. Other studies have found influences of room décor. One study showed disclosure to be substantially higher in a 'warm', intimate room (decorated with pictures, soft cushioned furniture, soft lighting) compared to a 'cold', non-intimate environment (un-decorated, fluorescent lighting; Chaikin et al., 1976). Similarly, another study found that interviews conducted in a room decorated more home-like (as opposed to office-like) led to increased written communication concerning both general and intimate topics (Gifford, 1988). The author attributed this to the prospect that homey décor is not just more physically comfortable, but can also be more psychologically comfortable, inducing a sense of shelter that is associated with home. These studies provide support for the influence of architectural aspects (i.e., room size) as well as aspects more feasibly manipulated (i.e., seating distance, decoration) on the interviewee's comfort and information disclosure.

Embodied cognition

Okken and colleagues (2012, 2013) proposed *Embodied Cognition* as another potential theoretical framework to inform our understanding of the influence of environment on disclosure. The theory posits that cognition is dependent on and shaped by the subjective experience of our body (Dijkstra, Eerland, Zilmans, & Post, 2014). Essentially, cognition does not begin and end with the brain; rather it draws

upon physical experiences. In this regard, Okken (2013) suggested that by manipulating the amount of physical space (i.e., room size, interpersonal distance), participants experienced more or less psychological space, which influenced their willingness to self-disclose. An area of embodied cognition focuses on metaphorical thought, and how metaphoric concepts can arise from physical correlates of emotion. As Lakoff (2012) exemplified, feelings of anger cause our skin temperature and blood pressure to increase, therefore, metaphors such as "his blood was boiling" conceptualize the emotion of anger. Metaphoric priming has been used as a theoretical framework in emerging studies related to physical environments and investigative interviews (i.e., Dawson, Hartwig, Brimbal, & Denisenkov, 2017), which we will discuss below.

Environmental manipulations and legal psychology

Research on the role of the environment specific to investigative interviews has recently gained momentum, and researchers are expressing a need to delve more into this topic (Evans, Meissner, Brandon, Russano, & Kleinman, 2010; Goodman-Delahunty et al., 2014;Meissner, Kelly, Woestehoff, 2015)

Kelly, Miller, Redlich, and Kleinman (2013) illustrated the importance of the environment in their taxonomy of interrogation methods (see Figure 2). At the heart of the taxonomy is rapport and relationship building, which as aforementioned are vital components of an information gathering interview. Rapport can be influenced by the other domains, Collaboration (e.g., appealing to sense of cooperation, making bargains with the interviewee), Confrontation/competition (e.g., lying to interviewee, emphasizing authority), Evidence presentation (e.g., presenting false incriminating evidence, reveal evidence that interviewee was unaware the investigator had), and

Emotional provocation (e.g., appeal to self-interests of interviewee, instill hopelessness, use flattery).

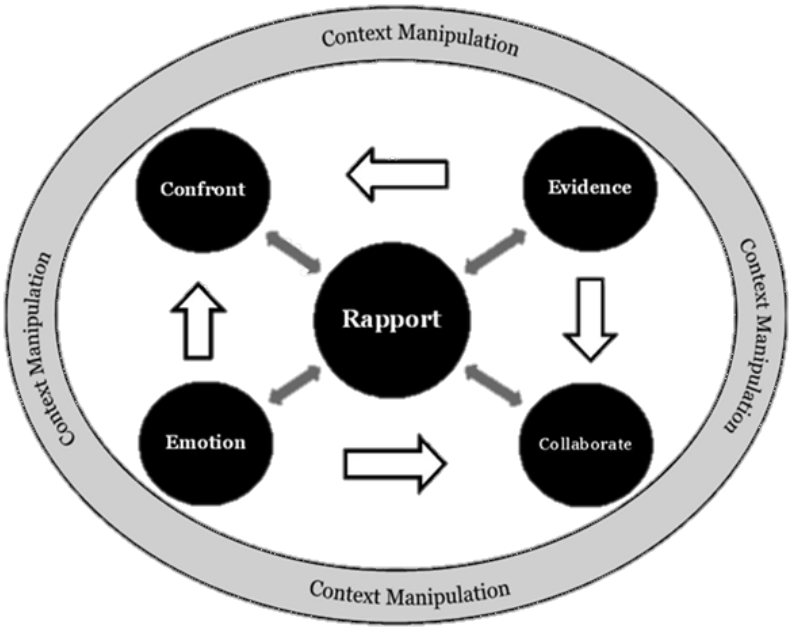


Figure 2. Taxonomy model from Kelly, Miller, Redlich, and Kleinman (2013)

Kelly and colleagues (2013) emphasized the role of *context manipulation* in investigative interviews. In this model, context manipulation refers to the altering of the physical and/or temporal space of the interrogation room, to increase the probability of a successful interview. Examples of contextual manipulations include considering the size of the interview room, the time of day of the interview, the seating arrangement, and room temperature. Context manipulation is composed solely of techniques based on non-interpersonal and environmental factors rather than communicative ones.

Academics have begun to experimentally examine the effects of certain physical environmental aspects in investigative interview settings. To our knowledge,

only two studies[1] - reported in Dawson, Hartwig, Brimbal, and Denisenkov (2017) - have looked at the effects of environmental manipulations in lab-based experiments on disclosure. Following a metaphoric priming framework, Dawson et al. (2017) proposed that aspects of the physical environment (i.e., spaciousness) can prime cognition in metaphoric ways (i.e., activating concepts of openness), consequently influencing behaviors (i.e., encouraging disclosure). In both studies, participants were interviewed about a staged crime they took part in. The size of the interview rooms was manipulated, with one room twice the size of the other. The larger room was helpful in eliciting disclosure: participants who were interviewed in the larger room provided more critical and overall details regarding the crime than participants who were interviewed in the smaller room. The authors suggested a simple explanation for this; a larger room elicits more comfort and thus fosters a more positive dynamic between the investigator and the interviewee. This is consistent with the previous health care literature on room size and client disclosure. Further, self-reported ratings showed that participants interviewed in the larger room reported wanting to leave less than those interviewed in the smaller room.

Additionally, in a study evaluating both interviewers' and high-value detainees' perceptions of coercive and non-coercive strategies for eliciting cooperation, Goodman-Delahunty and colleagues (2014) found the physical setting to be linked to perceptions of non-coercion. Interviews that were conducted in a comfortable setting were associated with an increase in detainees' disclosure of incriminating

[1] A third study, ten Brinke, Khambatta and Carney (2015), examined the effects of altering interview room characteristics. However, as these authors were primarily interested in lie detection accuracy rather than disclosure, we decided not to discuss it.

information. The authors note that the comfortable setting may have fostered rapport, which in turn facilitated disclosure.

Environmental Manipulations in Police Practice

In police practice, some suspect interviewing manuals take contextual manipulations into account. Concerning criminal investigations, the Reid manual provides specific recommendations for how to arrange the interview room. For example, the lighting should not be excessive or glaring, there should also be no distractions present (e.g., no wall decorations, no loose objects like paperclips). Moreover, the seating arrangement between the suspect and interviewer should be at a close distance (approximately 122 cm). The Reid manual also suggests the investigator should sit at eye-level and directly in front of the suspect with no desk or table separating them – thus to facilitate the detection of deception through the suspect's body movements. Additionally, the investigator should be dressed in civilian clothes if possible, rather than in uniform, to reduce the suspect's stress level (Inbau, Reid, Buckley, & Jayne 2013). In the military setting, the US Army Field Manual (2-22.3, 2006) cites the change-of-scenery approach as a recommended tactic to obtain information. This approach consists of removing the suspect from a formal and intimidating atmosphere (i.e., interview room) and placing them in a setting where they may feel more comfortable talking.

Furthermore, investigative interviews do not always take place in formal rooms inside police stations, particularly interviews conducted with victims and/or witnesses. According to a national review of interviewing practice in the U.K, it is common to conduct interviews at witnesses' homes and workplaces (Clarke & Milne, 2001). For example, a senior investigator from The Hague's Police Unit in the

Netherlands stated that when handling uncooperative witnesses, he does not interview them at the station, but rather takes them out for a coffee or meets them at home. He does this to instill trust and create rapport with the witnesses:

> "[….] First be a friend and after being a friend, start talking. And then convince someone it is very important to talk. So, go to a place where you can have coffee or have lunch. And then you build the relationship, after you can talk to them about the case" (De La Fuente Vilar et al., 2018).

Outline of This Thesis

Based on the literature reviewed here, there is reason to believe that the interview environment can facilitate information disclosure from interviewees, and while some interviewing manuals take environmental considerations into account (e.g., the Reid manual), we still know very little about their effectiveness. The aim of this thesis was to examine if and how the interview setting can facilitate information elicitation in an investigative interviewing context – thus, information disclosure was the primary outcome of interest throughout this thesis. Moreover, given the robust association between rapport-building and disclosure, a second outcome of interest was to examine how interview settings influence rapport-building efforts. We also aimed to gather a more complete picture of how context manipulation techniques are used in the field, and to what degree investigators believe them to be effective and useful.

In Experiment 1 (Chapter 2) we examined specific aspects related to physical spaciousness. Specifically, we manipulated room size and seating - or interpersonal - distance between interviewer and interviewee. Previous studies found larger room size (Dawson et al., 2017; Okken et al., 2012, 2013) and greater interpersonal

distance (Okken et al., 2012, 2013) to promote higher disclosure of information from interviewees. Thus, we sought to replicate these findings, as well as to explore how spaciousness interplays with rapport-building.

In Experiment 2 (Chapter 3) we tested the influence of the physical environment more broadly by comparing interviews conducted in two different settings. Based on police practice, we know that interviews often take place outside of the police station (i.e., at interviewees' work, at home, on the street; Clarke & Milne, 2001), this is particularly relevant for interviews conducted with witnesses. Therefore, in this study we compared interviews conducted at witnesses' homes with a more formal, typical police interview room.

Studies 3 and 4 consisted of two surveys. While some literature on interview environment hints that a room made to be comfortable is optimal (Goodman-Delahunty, et al. 2014), other studies have found that interviewees become suspicious and wary of the investigator's intentions if the environment does not confirm their expectations, which can be counter-productive (e.g., Dawson et al., 2017). Under the premise of the Expectancy Violation Theory (EVT; Burgoon, 1993), in Study 3 (Chapter 4) we examined what people's expectations are of police interview environments from individuals who are going through the criminal justice system and individuals who have not.

In Study 4 (Chapter 5) we sought to gain a more complete understanding of how contextual techniques are employed by practitioners in the field. For this, we gathered police interviewers' beliefs about context – or environmental related interviewing tactics through an international survey. We questioned police officers about their thoughts of the context manipulation techniques outlined by Kelly et al.'s

(2013) taxonomy, as well as their use and perceived efficacy. Lastly, in our discussion (Chapter 6) we present a summary of the key findings, followed by implications for research and police practice, as well as an overview of this thesis' limitations and suggestions for future research on interviewing environments.

CHAPTER 2

THE INFLUENCE OF ROOM SPACIOUSNESS ON INVESTIGATIVE INTERVIEWS

This chapter draws from the following paper:

Hoogesteyn, K., Meijer, E.H., Vrij, A. (2019). The influence of room spaciousness on investigative interviews. *Legal and Criminological Psychology, 24,* 215-228.

Abstract

The quality of information obtained from investigative interviews largely relies on the quality of communication between the interviewee and interviewer. One aspect of the communication process that has yet to be well examined is the environment in which the interviews take place. The present study examined the influence of physical spaciousness – manipulated as room size and interpersonal sitting distance between interviewer and interviewee – on the disclosure of crime related information, as well as perceptions of rapport and overall interview experience. Participants engaged in a virtual reality scenario depicting a crime, and were interviewed as suspects in either a larger or smaller room, at a closer or larger distance. Results showed no links between room size or sitting distance on disclosure rates. However, an exploratory analysis did reveal that participants interviewed in the larger room reported a more positive interview experience in terms of spaciousness, and consequently higher perceptions of rapport, compared to those interviewed in the small room. We found no evidence for an influence of room size and interpersonal distance on disclosure. Still, our study does provide initial evidence that manipulating room size in an interview context can positively impact rapport building.

Keywords: Investigative interviewing, room spaciousness, context manipulation, disclosure, rapport-building.

The Influence of Room Spaciousness on Investigative Interviews

The purpose of an investigative interview is to obtain as much accurate information as possible (Shepherd & Griffiths, 2013). The amount of information disclosed largely relies on the communication process between the investigator and the interviewee (Yeschke, 1997). It is therefore recommended for investigators to develop a positive and constructive dynamic – or rapport – with the interviewee as an important first step during all interviews (i.e., Bull & Milne 2004; Fisher & Geiselman, 1992). Through rapport building, investigators are able to develop a relationship with the interviewee, creating an atmosphere that encourages cooperation and supports the task of obtaining information (Abbe & Brandon, 2013). Rapport consists of showing empathy, personalizing the interview (Fisher & Geiselman, 1992), as well as engaging in active listening, attentiveness, and friendliness (Collins, Lincoln, & Frank, 2002).

While rapport building has received substantial attention in the literature and interviewing manuals (i.e., UK's PEACE model for interviewing), one aspect of the communication process that has been neglected is the environment in which the interview takes place. When we communicate, aspects of our environmental surroundings exert an influence on our behavior, and the way we perceive our environment can in turn influence how we communicate with others (Ignatius & Kokkonen, 2007; Knapp, Hall, & Horgan, 2013; Lebaron & Streeck, 1997). For example, a constrained environment can be associated with feelings of discomfort and apprehension, potentially causing us to become distant and withholding, while a warm and inviting environment can help us relax and feel at ease (Knapp et al., 2013). In the present study, we specifically examined if and how physical

spaciousness - manipulated as room size and interpersonal seating distance - influences rapport-building and the disclosure of information.

The room size and interpersonal seating distance aspects are relevant for three reasons. First, they are incorporated in investigative interview models. For example, in the taxonomy of interview methods by Kelly, Miller, Redlich, and Kleinman (2013), *context manipulation* refers to techniques that alter the physical and/or temporal space of the interview room to maximize the probability of a successful interview (i.e., obtaining accurate and reliable information from the interviewee). Examples of context manipulations include adjusting the size of the interview room, the seating arrangement, the time of day, and room temperature (see Kelly et al., 2013 for a complete list of proposed techniques).

Notably, in their taxonomy Kelly and colleagues operationalize the relationship between context manipulation and interview quality as interactive and indirect. Rapport building is at the center of their model (i.e., Abbe & Brandon, 2013; Vallano & Schreiber Compo, 2011), which then interacts with the other domains (i.e., evidence presentation, confrontation, collaboration, emotional provocation, and context manipulation; see Figure 1). The authors illustrated the importance of context manipulation, encompassing the model, because they argued that the context - or environment - should always be considered. The context can influence the rest of the domains, starting with rapport-building. It is, for example, easily imaginable that a pleasant and comfortable setting can facilitate the interviewer-interviewee dynamic and thereby interview quality.

The second reason that aspects of room size and interpersonal seating distance are relevant is because some investigative interviewing guidelines take them into

account. For example, the Reid manual recommends the seating proximity between suspects and interviewers to be at a close distance (approximately 1.22m) arguing that sitting physically close translates to feeling psychologically close, creating a more intimate environment conducive to obtaining information (Inbau, Reid, Buckley, & Jayne, 2013). In line with these recommendations, a police survey showed that conducting interviews in a small, private room was the second highest rated technique out of 16 interview practices used by North American law enforcement officials, with 42% of respondents stating to always use this technique (Kassin, Leo, Meissner, Richman, Colwell, Leach, & La Fon, 2007).

Lastly, room size and interpersonal distance are relevant to investigate because they determine physical spaciousness, and spaciousness has been shown to be promising for improving interviewees' affective experience and self-disclosure in the fields of communication and health-care. Spaciousness can be manipulated through architectural aspects (i.e., room size) and the interior design (i.e., seating arrangement; see Okken, 2013 for a taxonomy of environmental factors). Limited physical space could induce perceptions of crowding and constraint, in turn decreasing interpersonal communication (Sundstrom, 1975). Moreover, a study found that when communicating about intimate topics, participants placed at a closer distance to the interviewer spent less time in self-disclosure than those at a further distance (Johnson & Dabbs, 1976).

In two studies examining spaciousness, participants were interviewed about intimate topics in either a small or larger room, with a smaller or larger desk (measuring interpersonal distance; Okken, Rompay, & Pruyn, 2012; 2013). Results showed that the larger room size increased participants' perceptions of spaciousness

compared to the smaller room size, and these higher perceptions of spaciousness in turn led to a more positive interview experience. Moreover, compared to the smaller room and smaller interpersonal distance, the larger room and larger interpersonal distance resulted in a higher amount of self-disclosure for certain topics.

Despite the established use of environmental techniques in practice and other research fields, to our knowledge only two studies – reported in Dawson, Hartwig, Brimbal, and Denisenkov (2017) – have looked at the effects of environmental manipulations on disclosure specific to investigative interviews. In both studies, participants took part in a mock crime and were subsequently interviewed regarding their involvement. Two interview rooms were examined; a larger and spacious one designed to appeal to their sense of forthcomingness, and a smaller and enclosed custodial interview room. Results showed that participants who were interviewed in the larger room provided more overall details than those interviewed in the smaller room. Moreover, in one of their studies, these results were mediated by participants' perceptions of spaciousness, so that perceptions of greater spaciousness increased the odds of disclosure. Further, self-reported ratings showed that participants interviewed in the larger room reported wanting to leave less than participants interviewed in the smaller room. Notably, this finding challenges the assumption of the Reid technique that a smaller room is more efficient for investigative interviewing by fostering intimacy between the interviewer and interviewee, and eliciting more disclosure (Inbau, Reid, Buckley, & Jane, 2013).

Theoretically, the aforementioned studies applied an embodied cognition account, which posits that cognition is dependent and shaped by the subjective experience of our body, like the motor system, perceptual system, and interactions

with the environment (Dijkstra, Eerland, Zilmans, & Post, 2014). Essentially, cognition does not begin and end with the brain; rather it draws upon physical experiences. More specifically, an area of embodied cognition focuses on metaphorical thought, and how metaphoric concepts can arise from physical correlates of emotion. As Lakoff (2012) exemplified, feelings of anger cause our skin temperature and blood pressure to increase, therefore, metaphors such as "his blood was boiling" conceptualize the emotion of anger. In this regard, Dawson et al. (2017) proposed that aspects of our physical environment (i.e., spaciousness) can prime cognition in metaphoric ways (i.e., activating concepts of openness), consequently influencing behaviors (i.e., encouraging disclosure). Similarly, Okken (2013) suggested a strong connection between physical experiences and mental concepts. By manipulating the amount of physical space (i.e., room size, interpersonal distance), participants experienced more or less psychological space, which influenced their willingness to self-disclose.

The purpose of the current study was to take a step towards examining whether physical spaciousness improves rapport building and the disclosure of information. Stemming from previous literature, we sought to expand Okken et al.'s (2012, 2013) results to an investigative interview setting by manipulating the interpersonal sitting distance between interviewer and interviewee. Moreover, we sought to conceptually replicate Dawson et al.'s (2017) findings of room size and information disclosure, while also examining the influence of spaciousness on rapport building. Given the influence of spaciousness on affective experience in the aforementioned studies, and the robust association between rapport and information disclosure reported in the psycholegal literature, we expected rapport to be a mediator

between the spaciousness manipulations (room size and interpersonal distance) and disclosure. That is, compared to participants in the smaller room and smaller sitting distance conditions, participants in the larger room and larger sitting distance conditions would perceive the interview process, as well as the interviewer, more positively, hence promoting higher disclosure. Our hypotheses follow as:

Hypothesis 1: Participants in the larger room will rate the interview and interviewer more positively than participants in the smaller room;

Hypothesis 2: Participants in the larger room will disclose more information than participants in the smaller room;

Hypothesis 3: Participants with a larger distance between interviewer and interviewee will rate the interviewer and interview more positively than participants with a smaller distance between interviewer and interviewee;

Hypothesis 4: Participants with a larger distance between interviewer and interviewee will disclose more information than participants with a smaller distance between interviewer and interviewee;

Hypothesis 5: The relationships in Hypothesis 2 (room size and disclosure) and Hypothesis 4 (sitting distance and disclosure) will be mediated by rapport building.

Method

The present study was pre-registered and approved via the Open Science Framework (https://osf.io/rjv8m/). The study was approved by the standing ethical committee of Maastricht University.

Design. We used a 2 (Room size: large vs. small) × 2 (Sitting distance: close vs. further) between-subjects design with the following dependent variables: (i) quantity

of disclosure, measured by the number of units of information and (ii) quality of disclosure, measured by the amount of crime-related details provided. Further, we have the following dependent variables gathered from participants' self-reported data: (iii) perceived room spaciousness, (iv) perceived ease of self-disclosure, (v) perceived affective experience, and (vi) perceptions of rapport. We used participants' perceptions of spaciousness as subjective measures alongside our manipulations of room size and sitting distance.

Participants. One hundred and fifty-nine participants were recruited from a university to partake in a study concerning memory for events in exchange for one research credit (SONA Systems) or a €5 voucher. Out of the total sample, 20 participants had to be excluded due to different reasons, such as knowing the purpose of the study ($N = 8$), poor English proficiency ($N = 4$), not looking at part of the stimulus video ($N = 4$), knowing the interviewer ($N = 2$), and moving their chair during the interview, thus altering their distance conditions ($N = 2$). All decisions about data exclusions were made irrespective to condition and prior to data analysis. Our final sample consisted of 139 participants[2] (25 male and 114 female), with an average age of 21.2 years ($SD = 3.37$). Seventy-one were assigned to the small room condition and 68 to the large room condition; 70 participants were assigned to the close distance condition and 69 to the far distance condition.

Procedure. Upon arrival to the lab, participants were greeted by an experimenter who provided the consent form and instructions. The experimenter explained to each

[2] In our pre-registration we stated we would recruit 100 participants. However, this was due to a power miscalculation. We continued to test participants prior to data analysis after an updated calculation revealed we needed 138 total participants to detect a medium effect size (.30) with power set at .95 and $\alpha = .05$, for a correlation bivariate normal two-tailed model.

participant that they would participate in a virtual reality (VR) task in which they would meet a friend of theirs, and together they were supposed to find a third person. They were instructed to pay close attention to all details. Once participants stated that they understood their objective, they were asked to put on the virtual reality equipment (headset and headphones) and begin the VR scenario, which ultimately depicted a crime in which participants became accomplices to (described below).

Next, participants were randomly allocated to either a small or larger interview room, with either a closer or further sitting distance between them and the interviewer. Upon finishing the VR scenario, the experimenter walked the participants to the interview room, informing them they were considered suspects of the crime, and needed to be interviewed. They were also told they would receive an extra €5 voucher if the interviewer believed them to be innocent; this was to incentivize participants to take the task more seriously. In reality, all participants received the extra voucher. Once the experimenter left, the interviewer (who had no previous contact with the participants) entered the room and began the interview. The interview script included a phase of rapport-building, and then proceeded to ask open-ended questions related to the crime (see interview subsection below for more information). Interviews were audio recorded. After the interview ended, the interviewer left the interview room and the experimenter returned, who then instructed participants to complete a post-interview questionnaire. Participants were also asked both on the questionnaire and by the experimenter if they had been aware of the purpose of the study prior to participating (i.e., from a friend who previously participated), assuring them that if they had they would still receive compensation.

We used these questions to exclude aware participants from the analyses. Lastly, participants were debriefed, thanked, and compensated for their participation.

Interview room manipulation. The two rooms we employed were not identical in structure (the smaller room was squared and the larger rectangular) and floor coloring (small room had beige tiles and the larger had green tiles), however they both had one desk, a desktop computer, and two chairs, university style fluorescent lighting, no windows, and bare walls. The larger room measured 9.3m^2 (3.72 length x 2.5 width) and the small room measured 5m^2 (2.73 length x 2.03 width). The sitting distances were arranged by the distance between the two chairs (close distance 1.65m, and further distance 2.10m). These distances were chosen based on what felt natural within the two rooms. The participants always sat on the chair against the wall, to prevent them from moving and altering the distance assigned. The interviewer and participants sat facing each other, with no desk in between them.

Interview. All interviews were conducted by four female trained research assistants. Prior to data collection, interviewers engaged in practice trainings to ensure they were familiar with the script and that their behaviors were consistent. Interviewers were instructed to engage in eye-contact, to speak professionally, and that the conversation should sound natural and fluid. Once interviewers entered the room, they introduced themselves by shaking the participants' hands, informed them they would begin the audio recording, and engaged in a structured interview script. The script began with a rapport-building phase where the interviewer asked participants four questions about themselves (i.e., "How is your day going so far?", "How is your experience as a student at [university]", "What year are you in school?", and "What do you want to do with your degree?"). Interviewers were instructed to respond

accordingly to each question, but to not self-disclose. Next, the interviewer informed participants they were to be interviewed about what happened as a person of interest. The interviewer began with an open ended question (i.e., "Please tell me from the very beginning to the very end what happened today") and followed up with five more specific questions (e.g., "Please tell me everything you can remember about the crime-scene/victim/people involved in the crime/conversation that took place/shooting"). After each question, participants were prompted once with "Is there anything else you remember?" On average interviews lasted 7 minutes and 24 seconds (*SD* = 2.48), of which the average time spent on rapport was 63 seconds (*SD* = .36).

Materials

Virtual reality (VR) scenario. The VR scene was designed by the Faculty of Psychology and Neuroscience's Instrumentation Engineering department at Maastricht University. A HTC Vive headset was used and the simulated scene operated on a Dell Precision 5810 computer. We decided to use VR to administer the mock-crime in order provide an increased feeling of immersion (compared to traditional 2D videos), as well as for increasing experimental control over what details participants were exposed to (as opposed to using a live mock-crime scenario). Further, emerging research on the use of VR has shown that participants react to VR stimuli and equivalent real-life events in a similar way (see Meenaghan, Nee, Van Gelder, Otte, & Vernham, 2018; Nee, White, Woolford, Pascu, Barker, & Wainwright, 2015).

In the VR experience, participants found themselves in an alleyway, and were given a minute to familiarize themselves with the environment. Shortly after, they

were approached by the friend who began conversing about the previous night, alluding that they were hanging out together. Consequently, a third man approached, looking to cross over to the other side of the alleyway. The friend then proceeded to rob the man of his watch. The man refused to hand over the watch and addressed the participant directly, asking to help control his friend. After this, the friend becomes frustrated and pulls out a gun, demanding the watch to be handed over. Ultimately, the friend pulls the trigger, shooting the victim who falls to the floor. The friend then advises the participant to start running, as he flees the scene. That is the end of the VR experience, which lasted 1 minute and 44 seconds.

Interview experience. All participants were asked to complete a self-report questionnaire about their perception of the room setting, how they felt throughout the interview, and how they perceived the rapport with the interviewer. Adapted from Okken et al.'s (2012), the perceived room spaciousness was measured using the items: "I feel confined inside this room," "I have enough freedom of movement inside this room," "I would easily feel suffocated inside this room" and "I was physically comfortable throughout the interview". The items were added up to provide an overall room spaciousness-measure, which reached acceptable internal consistency with a Cronbach alpha (α) of .71. Perceived ease of self-disclosure was measured with the items: "Inside this room I felt able to speak freely," "I felt uncomfortable providing information inside this room," and "I felt inhibited from speaking inside this room," and averaged for one self-disclosure measure (α = .77). To measure participants' affective experience, an affect-measure was used comprising the items: "Inside this room, I feel at ease," "I feel uncomfortable inside this room," and "This room gives me a pleasant feeling" (α = .77). All questions were

rated on a seven-point Likert-type scale (1 = *low amount of characteristic*, 7 = *high amount of characteristic*).

To examine participants' perceptions of the interpersonal distance, we included the following self-report questions: I liked the distance between me and the interviewer, the sitting distance made it easier for me to talk to the interviewer, I would have preferred to be seated at a larger distance to the interviewer, and I would have preferred to be seated at a closer distance to the interviewer. These questions were also rated on a seven-point Likert-type scale (1 = *low amount of characteristic*, 7 = *high amount of characteristic*).

To measure rapport, we used a measure containing all items of the interaction questionnaire by Vallano and Schreiber Compo (2011). The questionnaire comprises an *interviewer* and *interaction* subscales, for a total of 27 rapport-related characteristics ($\alpha = .87$). The questionnaire is rated on a seven-point Likert-type scale (1 = low amount of characteristic, 7 = high amount of characteristic). Participants used the *interviewer* subscale to rate the interviewer on characteristics such as friendliness and positivity. The *interaction* subscale was used by participants to rate the interaction on characteristics such as cooperativeness and coordination.

Disclosure. Disclosure was measured by the quantity and quality of the statements. For quantity of information we looked at word count and total units of useful information. For example, the following sentence: "I was standing in an alleyway, and I was meeting a friend. And we were going to go for a walk" had three units of information. Regarding quality of information, we coded crime-related details, such as details specific to the description of the shooter (e.g., clothing, gender). For example, the following statement: "[…] I believe there was only one gunshot. So it

was only shot the once. [The gun was] held sort of hip-ish height, so it wasn't sort of aimed upright or anything. It was definitely a threatening position" was coded as having 4 crime-related details. Two research assistants were trained on the coding scheme using a random subsample of the responses; coders discussed any discrepancies they encountered until they reached an acceptable interrater reliability. One main coder, blind to the conditions, then coded all participant responses, and the second randomly coded 20% of the sample. Both coders reached high agreement for total units of information provided, two-way random single-measures intraclass correlation coefficient (ICC) = .93, 95% CI [.87, .97], and total number of crime-related details (ICC = .91, 95% CI [.82, .96]).

Results

Self-reports

We hypothesized that participants interviewed in the larger room, and at a larger interpersonal distance would rate the interview and interviewer more positively. We conducted a Multivariate Analysis of Variance (MANOVA) with room size (large vs. small) and sitting distance (close vs. further) as the between-subjects factors, and perceived spaciousness, ease of disclosure, affective experience, and rapport as dependent variables. We found no significant multivariate interaction effect between room size and distance condition, Wilk's $\lambda = .99$, $F(4, 132) = .11$, $p = .98$, partial $\eta 2 = .003$. There was a significant multivariate effect of room size, Wilk's $\lambda = .90$, $F(4, 132) = 3.54$, $p = .009$, partial $\eta 2 = .097$. And a follow up ANOVA revealed a significant univariate main effect of room size only on perceived spaciousness ($F(1, 137) = 6.66$, $p = .011$, partial $\eta 2 = .046$) whereby participants in the larger room ($M = 19.14$, $SD = 4.22$) reported more overall spaciousness comfort

than those in the smaller room (M = 17.28, SD = 4.59). All other p-values ranged between .097 and .934.

Further, we found no multivariate effect for sitting distance, Wilk's λ = .99, $F(4, 132) = .23$, p = .92, partial $\eta 2$ = .007, as well as no significant univariate main effects on the self-reported measures. Therefore, we rejected our third hypothesis. However, in separate analyses, we examined participants' self-reports on the distance items (i.e., "I liked the distance between me and the interviewer", "The sitting distance made it easier for me to talk to the interviewer") and found that those in the closer distance condition reported preferring to sit at larger distance to the interviewer (M = 2.99, SD = 1.39) than participants in the larger distance condition (M = 2.52, SD = 1.26, $F(1, 137) = 4.27$, p = .041, partial $\eta 2$ = .030. This provides some indication that participants did perceive the closer distance as less comfortable than the further.

Moreover, a separate analysis revealed that, similar to Dawson et al., (2017), participants interviewed in the small room (M = 4.24, SD = 1.40) reported wanting to leave more than those in larger room (M = 3.38, SD = 1.67, $F(1, 137)= 10.82$, p = .001, partial $\eta 2$ = .073).

Disclosure

We expected participants in the larger room and larger interpersonal distance to provide more disclosure than those interviewed in the smaller room with a closer interpersonal distance. We conducted a MANOVA with room size (large vs. small) and sitting distance (close vs. further) as the between-subjects factors, and word count, total units, and crime-related units of information as dependent variables. We found no significant multivariate interaction effect between room size and distance

condition, Wilk's $\lambda = .99$, $F(3, 133) = .35$, $p = .79$, partial $\eta 2 = .008$. We also found no significant multivariate effect of room size, Wilk's $\lambda = .97$, $F(3, 133) = 1.17$, $p = .32$, partial $\eta 2 = .026$ and no multivariate effect for interpersonal distance, Wilk's $\lambda = .97$, $F(3, 133) = 1.15$, $p = .33$, partial $\eta 2 = .025$. Therefore, we rejected our second and fourth hypotheses.

Lastly, since we did not find an association between room size or interpersonal distance and any of the disclosure measures, we did not conduct a mediation analysis with rapport as a mediator. Thus, our fifth hypothesis was also rejected.

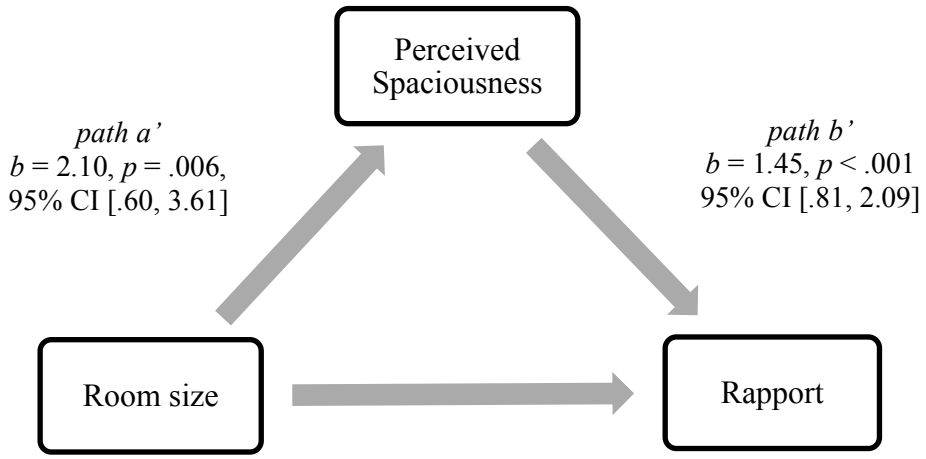
Exploratory Analyses

Because we found a significant correlation between room size and perceived room spaciousness ($r = .215$, $p = .011$), and a significant correlation between perceived spaciousness and rapport ($r = .362$, $p < .001$), we decided to run a mediation analysis with room size as our predictor, perception of spaciousness as our mediator, and rapport as our outcome. The different interviewers were added as covariates in this model (Figure 3). Of note, a statistically significant direct effect between predictor and outcome is not a precondition for mediation (Hayes, 2009).

Results indicated that room size was a significant predictor for perceived spaciousness (path a') and that perceived spaciousness was a significant predictor for perceptions of rapport (path b'). Room size was not a significant predictor of rapport when controlling for the mediator, perceived spaciousness, which is consistent with full mediation (path a* path b). Therefore, participants perceived rapport more positively, when they also perceived the room spaciousness more positive.

We tested the mediation using the PROCESS macro for IBM SPSS (Preacher & Hayes, 2008). PROCESS uses a nonparametric resampling procedure with n = 5,000 bootstrap resamples to derive a 95% confidence interval and a point estimate for an indirect path. This technique yielded confidence intervals that did not include zero, therefore suggesting that perceptions of rapport were mediated by perceived spaciousness.

Figure 3. *Mediation model with room size as predictor, perceived spaciousness as mediator, and rapport as outcome variable. Interviewers were added as covariates.*



path c' direct effect, b = -3.03, p = .30, 95% CI [-8.83, 2.76],
*path a*path b indirect effect,* b = 3.05, r^2 = .15, 95% CI [.88, 6.50]

Discussion

We found that our manipulations of spaciousness (room size and interpersonal distance) did not result in significantly different perceptions of rapport, or in an increased disclosure rate. All five hypotheses were not supported. An explorative analysis revealed that room size was positively associated with rapport via perceived spaciousness, although we note the small effect size. At minimum, the

findings suggest that our room size manipulation was effective in affecting participants' perception of room spaciousness, and that this perception of spaciousness was in turn associated with positive rapport building. These results contradict the Reid technique's assumption that smaller rooms foster closeness with the interviewer (Inbau, Reid, Buckley, & Jane, 2013). This also highlights the importance of considering the interviewee's perceptions and personal experience in relation to their comfort and overall interview experience.

We did not find the hypothesized influence of room spaciousness on disclosure of crime-relevant information, failing to replicate Dawson et al.'s (2017) findings. While our study differed from Dawson et al.'s in several aspects, the core elements were consistent. We had similar sample sizes, lab-based paradigms (involvement in a mock crime by delivering a flash drive with sensitive information vs. involvement in a shooting via VR), and in both studies disclosure was measured by total details and crime-related (or critical) details. Most importantly, room spaciousness was successfully manipulated in both labs via room size, with participants interviewed in the larger room conditions reporting more positive perceptions of spaciousness than participants interviewed in the smaller room.

Given the disparate results, more studies are needed to establish whether spaciousness can indeed foster higher disclosure in an investigative interviewing context. Particularly, future studies should carefully examine the mechanisms behind the effect. Previous studies have stemmed from an embodied cognition and social priming approach (Okken, 2013; Dawson et al., 2017), however, such priming research should be approached with caution, as it has generated substantial scepticism in the social psychology field due to failures to replicate (e.g., Bower,

2012; Camerer et al., 2018; Yong, 2012; Verschuere et al., 2018). For example, in an effort to replicate Dawson et al.'s, (2017) findings and other well-known priming measures, Dianiska, Swanner, Brimbal, and Meissner (2019) examined the influence of lexical (i.e., word scrambles related to openness concept), contextual (e.g., room decorative posters depicting open settings) and embodiment primes (e.g., interviewers' open or closed off body postures) on information disclosure, failing to find convincing evidence of their influence. Instead, the underlying mechanism behind the influence of environmental factors may be much simpler: comfort.

As noted by Dianiska et al. (2019), and in line with previous related studies, creating a more comfortable environment (e.g., decorations, lighting, spaciousness) can make individuals feel more comfortable and at ease (Gifford, 1988; Okken et al., 2013). Such comfort variables may not just be physically comfortable, but also psychologically comfortable, creating a sense of ease that encourages communication and disclosure (Gifford, 1988; Knapp et al., 2013). Nonetheless, what is considered comfortable remains a subjective measure. We emphasize that future research should focus on examining interviewees' perceptions and personal experience in relation to their comfort and other environmental aspects that could help with eliciting information.

Limitations and Future Directions

Our results need to be interpreted in the light of several limitations. First, given our experimental paradigm, ecological validity is limited. The mock crime and subsequent interview may have failed to elicit feelings of discomfort associated with a police interview. Similarly, the rooms we used were within the university, and thus familiar to the participants. This may have affected participants' initial comfort

levels, as they may already feel comfortable in a familiar environment. Another point qualifying the conclusion that there was no influence of seating distance is that the two distance conditions we employed may not have differed enough to elicit differences. Research on proxemics suggests there are four different interpersonal distance zones which people choose, often unconsciously, depending on how intimate they want the interaction to be. Those zones include the intimate (0 to 0.5m), personal (0.5 to 1.2m), social (1.2 to 3.7m) and public (greater than 3.7m) zone (see Hall, 1990). Our interpersonal distance manipulations of 1.65m and 2.10m were both in the social zone. Future studies may derive more from proxemics research by employing a larger range of distances to determine what is more appropriate for police interviewing practices. For example, by directly testing the Reid manual's recommendation of 1.22m, which lies closer to the personal zone according to Hall (1990).

Further, in this study we primarily focused on examining if spaciousness influenced participants, and not the interviewers. The interviewers in our study were aware of the participants' conditions (from the room size and interpersonal distance). In our method section we noted that the interviews were highly scripted, and we found no effect of interviewer on our outcomes. Nonetheless, it is necessary for future research to closely examine if and how the environment influences the interviewer's behavior. Lastly, while we used VR to administer the mock shooting scenario, we did not gather participants' levels of virtual immersion or perceptions of realism. Given the novelty in employing VR simulations, future studies should include such measures to appropriately determine its benefits against more traditional 2-dimensional videos and live mock-crime simulations.

In sum, our study yielded a lack of evidence for an influence of room size and interpersonal distance on disclosure. Still, our study does provide initial evidence that manipulating room size in an interview context could positively impact rapport building. Moreover, the effect of room size on rapport was mediated by perceived spaciousness. This suggests that simple manipulations increasing merely the perceived spaciousness may positively affect the interview. In this study we explored room size and seating distances, yet there are other aspects – related to architecture and interior design – that influence interviewees' perceptions of spaciousness which remain to be tested within an investigative interview context, for example, lighting (Okken, Rompay, & Pruyn, 2013b; Gifford, 1988) as well as room color (Oberfeld, Hecht & Gamer, 2010) and ceiling height (Meyers-Levy & Zhu, 2007).

Environmental manipulations can be feasible to implement, offering simple tactics for improving the interviewing process, while steering away from problematic accusatorial techniques. Environmental factors can be considered when constructing or re-modeling interview rooms, and through training practitioners on how to use the environment to their advantage, these factors have the potential to offer practical recommendations that could aid rapport building efforts.

CHAPTER 3:

EXAMINING WITNESS INTERVIEWING ENVIRONMENTS

This chapter draws from the following manuscript:

Hoogesteyn, K., Meijer, E.H., Vrij, A. (2019). *Examining witness interview environments.* Manuscript under review.

Abstract

The literature on the disclosure of information in psycholegal settings has predominantly focused on the dynamic between the investigator and the interviewee, while little attention has been given to the environment in which the interview takes place. The present study compared two interview locations on the disclosure of crime-related information and perceptions of rapport building. Participants experienced a virtual reality mock crime, and one week later were interviewed at either their homes, or in a formal room akin to a real-world police interview room. Participants in the home interview setting reported feeling more at ease and in control than participants interviewed in the formal interview room. However, we found no differences between conditions on the quantity and quality of information disclosure and participants' perceptions of rapport building. Based on our findings, we found no advantages or disadvantages for conducting witness interviews at their homes. However, these results propose the practicality of interviewing witnesses outside the police interview room if it is deemed as more convenient.

Keywords: Witness interviews, interview environment, interview location, information disclosure, rapport-building.

Examining Witness Interviewing Environments

Many authors have argued that the main goal of an investigative interview is to gain as much reliable information as possible (Evans, Meissner, Brandon, & Russano, 2010; Shepherd & Griffiths, 2013; Vrij, Meissner, Fisher, Kassin, Morgan III, & Kleinman, 2017). To achieve this, investigators must create an atmosphere that promotes the disclosure of information, for example, by employing tactics such as rapport-building and by asking appropriate, information-gathering questions (Vallano & Schreiber-Compo, 2011). While most of the literature on maximizing information disclosure has focused on the verbal and non-verbal communication between investigator and interviewee, little research has examined how the interview environment may help in eliciting information.

The environment in which an interview takes place affects its quality. This has been investigated in fields outside of legal psychology. For example, studies in the healthcare field found that clients' self-disclosure about personal topics was substantially higher in a 'soft', intimate room (decorated with pictures, comfortable chairs, soft-lighting) than in a 'hard', non-intimate environment (block walls, uncomfortable chairs, fluorescent lighting; Chaikin, Derlega, & Miller, 1976). Another study indicated an influence of room décor on interpersonal communication, with a room decorated more home-like (as opposed to office-like) fostering more communication concerning general and intimate topics (Gifford, 1988). Gifford argued that a homey décor is not just more physically comfortable, but can also be more psychologically comfortable, inducing a sense of shelter that is associated with home. The overarching model in these studies is that comfortable, pleasant environments encourage more social interaction (Gifford, 1988). It may well be

possible that the effects of environment on interview quality in healthcare settings translate to investigative interview scenarios. For example, in two studies, Dawson, Hartwig, Brimbal, and Denisenkov (2017) found the physical spaciousness of the interview room to foster information disclosure regarding a mock terrorism conspiracy.

Aside from specific aspects of the interview room, one environmental factor that is of interest here is interview location. Investigative interviews do not always take place in formal rooms inside police stations, particularly interviews conducted with witnesses (Fisher & Geiselman, 1992). According to a national review of interviewing practice in the U.K, it is common to conduct interviews at witnesses' homes and workplaces (Clarke & Milne, 2001). The UK's College of Policing also recommends investigators to thoroughly consider the interview's location prior to the interview, and how the interview rooms' formality may affect witnesses (College of Policing, 2013). Akin to the healthcare studies outlined above, homey interview settings could be more effective for information disclosure as opposed to interviews conducted in formal and scarcely decorated police stations. Although we know that in practice police interviews take place in the field, little to no scientific research has specifically examined the potential advantages or disadvantages of conducting witness interviews outside the station. Therefore, in the present study we aimed to compare disclosure in interviews conducted at participants' homes and interviews conducted in a more typical, formal, police-like interview room.

A second aim of this study was to examine how the interview location influences witnesses' perceptions of rapport. Rapport-building has received substantial attention in the psycholegal literature, emphasizing its importance for

improving the quality of communication and disclosure of information between witnesses and investigators (e.g., Clarke & Milne, 2001; Collins, Lincoln, & Frank, 2002; Fisher & Geiselman, 1992; Gudjonsoon, 2003; Powell, Fisher, & Wright, 2005). Rapport-building consists of showing empathy, personalizing the interview (Fisher & Geiselman, 1992), as well as engaging in active listening, attentiveness, and friendliness (Collins, Lincoln, & Frank, 2002). The goal of rapport building is to develop a positive and constructive investigator-interviewee relationship, creating an atmosphere that encourages cooperation and supports the task of obtaining information (Abbe & Brandon, 2013; Collins et al., 2002; Hartwig, Granhag, & Vrij, 2005). Rapport has been shown to increase the likelihood, as well as the accuracy, of disclosure from witnesses (Vallano & Schreiber-Compo, 2011; Alison, Alison, Noone, Elntib, & Christiansen, 2013; Kieckhaefer, Vallano, Schreiber-Compo, 2014). In practice, police officers also recognize the vital role of establishing rapport (e.g., Kassin et al., 2007; Kelly, Redlich, & Miller, 2015).

To date, the literature on rapport has mainly focused on the communication between the witness and investigator, but has neglected the role of the physical environment in which the interaction occurs. Altman (1990) discussed the conceptualization of rapport, suggesting it to be a contextual phenomenon that variesaccording to the relationship of the individuals involved, the social context, and the physical context. Different physical contexts do not necessarily cause changes in rapport, but rather, individuals develop rapport that is appropriate to different contexts. According to Altman (1990), social relationships are linked to the physical environments in which they occur, where the environment contributes to the social dynamic. Thus, the development and establishment of rapport varies across different

physical contexts. This raises an interesting question of how investigators and interviewees perceive and develop rapport in different interview environments.

A third exploratory variable of interest relates to anxiety and whether participants interviewed at home would experience less state – or situational – anxiety than those placed in a formal environment. Anxiety can be prompted by the fear of being in police custody, in view of the police investigation, and/or by phobic symptoms such as claustrophobia (Geijsen, 2018). Since stress and anxiety can interfere with a witness' ability to recall an event (Resiser, 1980; Kieckhaefer, Vallano, & Schreiber-Compo, 2014), some interview protocols (e.g., the Cognitive Interview) take into consideration the situational anxiety that witnesses may experience (Fisher, Geiselman, & Amador, 1989). A key assumption is that a relaxed and comfortable witness will be more compliant and cooperative than an anxious and uncomfortable witness, and therefore a relaxed and comfortable witness will try harder to recall the event. For that reason, it is recommended that interviews be conducted in pleasant surroundings (see Collins Lincoln, & Frank, 2002).

An example of pleasant surroundings are the "soft" police interview rooms some police stations have. Feld (2014) interviewed U.S police officers who distinguished between interviews conducted with juveniles in "hard or cold" and "soft and warm" rooms. The "hard and cold" rooms were bare, stark, and small, resembling what is typically depicted in police television shows and primarily used for suspect interviews. The "soft and warm" rooms were furnished with rugs and comfortable sofa chairs to provide a more relaxed setting for witnesses and victims. Similarly, according to the Oregon Interviewing Guidelines for children, the interview setting should aim to reduce the stress inherent to being interviewed by the

police, and facilitate the disclosure of information (Bohannan, 2004). However, guidelines on what makes a child friendly environment are scarce (Newlin, Steele, Chamberlin, […] & Vaughan-Eden, 2015), and even then, the few sources available on interviewing environment, anxiety, and memory performance has mostly focused on children rather than adult testimonies.

The detrimental effects of anxiety on memory is also evident from the literature on the benefits of rapport-building, which suggests that rapport aids witness recall as it reduces the anxiety associated with being interviewed by the police (e.g., Almerigogna, Ost, Bull, & Akehurst, 2007; Vallano & Schreiber-Compo, 2011, 2015). Therefore, we were interested in testing whether interview location served as another aid for managing witness anxiety levels. Given that homey environments are associated with more ease and comfort (e.g., Gifford, 1988), we expected witnesses interviewed at home to report less situational anxiety coming into the interview scenario compared to those interviewed in the formal environment.

Thus, in the present study we examined the influence of the physical environment in witness investigative interviews by comparing interviews conducted in two different locations; witnesses' homes and a more formal police interview room. Our hypotheses followed as:

Hypothesis 1 – Participants interviewed at their home will provide more critical and more complete information than those interviewed in the formal interview room.

Hypothesis 2 – Participants interviewed at their home will perceive rapport with the investigator more positively than those interviewed in the formal interview room.

Hypothesis 3 – Participants interviewed at their home will experience less state anxiety than those interviewed in the formal interview room.

Method

Design and Participants

Participants were interviewed either at their own home or in a formal interview setting about a virtual reality (VR) experience. The dependent variables were: (i) quantity of disclosure measured by the number of units of information, (ii) quality of disclosure, measured by the amount of crime-related details provided and statement completeness, (iii) perceptions of rapport, and (iv) state-anxiety index. Given the applied nature of our research question, we aimed to achieve enough power to detect a large effect size. Based on a G*Power calculation, given an alpha = .05, and power = 0.95 the projected sample size needed for a large effect size (.80) was approximately $N = 70$. Eighty-six student and staff members (staff were administrative and naïve to forensic psychology research) were recruited from a university. Twelve participants had to be excluded from the analysis due to dropping out after the first session ($N = 9$), and not looking at parts of the virtual reality video ($N = 3$). All exclusions were removed prior to data analysis. The final sample consisted of 74 participants (35 in the home condition, 39 in the formal interview room condition); six of the participants were staff members. Participants' age range was 18 to 51 years ($M = 21.70$ years, $SD = 6.21$), and the majority were female (53 female, 21 male).

Procedure

This study was reviewed and approved by the standing ethical committee at Maastricht University. Participants were recruited via SONA Systems or via email invitations and signed up either for 1 SONA credit or a £5 gift card. All participants signed up for two-sessions, one-week apart and were randomly assigned to one of the two interview settings (i.e., own home or formal interview setting). In the first session, all participants provided written consent and engaged in the VR scenario which depicted an attempted robbery and shooting. The VR scenario is the same one used in Experiment 1 (**Chapter 2**).

Prior to starting the VR scenario, participants were told that in the scenario they would meet a close friend of theirs, and that together they would look for a third person. At the beginning of the scenario, participants found themselves in an alleyway. They were given a minute to familiarize themselves with the environment before they were met by the alleged friend. The friend proceeded to converse about last night and how they had fun, insinuating that they were indeed friends. Shortly after, a third man approached, and the friend proceeded to talk to the man about his watch, attempting to rob him. The man refused to hand over the watch and addressed the participant directly, asking to help control his friend. After this, the friend became frustrated and pulled out a gun, demanding the watch to be handed over. Ultimately the friend pulled the trigger, shooting the victim who fell to the floor. The friend then advised the participant to start running, as he fled the scene. After the VR portion, participants were given a reminder sheet for their appointment due the following week either at their home or the formal interview room, which was located at the University's Center for Forensic Interviewing.

On the day of the interview, participants arrived at the formal interview location or the investigator met participants at their home. The formal interview room was bare, with a large window (blinds kept closed to avoid distractions), a one-way mirror, two purple single sofa chairs, and a small table in between. Upon arrival, participants filled out the state anxiety portion of the State and Trait Anxiety Index (STAI). Subsequently, all participants were interviewed by the same investigator, who had no prior interaction with them, in a structured, information-gathering interview style. The investigator began developing rapport by asking four scripted, general questions derived from Kieckhaefer, Vallano, and Schreiber-Compo (2014; i.e., "How is your day going?", "How is your experience at the university"?, "What year are you in school?", and "What do you want to with your degree?"). The investigator responded to each answer accordingly but without self-disclosing. The investigator then moved to the questioning phase, using a standardized script that consisted of seven open-ended non-suggestive questions. The investigator began by asking the witness to tell from the very beginning to the very end what had happened, followed by a series of cued questions asking everything they could remember about the crime-scene, the victim, the people involved in the crime, and the conversation that took place during the crime. The investigator then asked participants about their involvement in the crime ("I understand you were involved in the [shooting/or crime if they did not mention shooting]. Could you tell me more about that?") and finished the interview by asking if there was anything else about what happened that the participant would like to share. After each question participants were probed once with "Is there anything else you remember about [the victim/the conversation/etc.]".

The investigator was instructed to engage in active-listening (i.e., using affirmations such as hmm, okay) throughout the entire interview. All interviews were audio recorded for transcribing and coding purposes. Once the interview was completed, participants filled out a rapport focused questionnaire and a questionnaire regarding their general experience throughout the interview. Lastly, they were thanked and compensated for their participation.

Materials

Rapport questionnaire: We measured rapport via the interaction questionnaire by Vallano and Schreiber Compo (2011). The questionnaire contains 27 rapport-related characteristics rated on a seven-point Likert-type scale (1 = *low amount of characteristic*, 7 = *high amount of characteristic*). Participants rated the level of rapport they experienced with the investigator, including characteristics such as friendliness and positivity. They also rated the level of rapport pertaining to the interaction between themselves and the investigator, including characteristics such as cooperativeness and coordination. After some items were reverse coded, we aggregated all 27 questions to obtain an overall rapport measure (Cronbach alpha (α) = .91).

Interview experience questionnaire*:* The questionnaire was adapted and extended from Okken, Van Rompay and Pryun (2013), and included the following queries: "I felt confined in this environment", "I would easily feel suffocated in this environment", "I was physically comfortable throughout the interview", "I felt uncomfortable providing information in this environment", "In this environment I feel able to speak freely", "I felt inhibited from speaking in this environment", "I felt at ease in this environment", "I felt uncomfortable in this environment", "In this

environment I felt in control", "I felt like leaving this environment", and "This environment gives me a pleasant feeling". These questions were rated on a seven-point Likert-type scale (1 = *low amount of characteristic*, 7 = h*igh amount of characteristic*), and analyzed as individual variables.

State-Trait Anxiety Inventory (STAI): The STAI is a measure of state and trait anxiety for adults (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). Form Y-1 consists of 20 state anxiety items, evaluating the current state of anxiety, using items that measure subjective feelings of apprehension, tension, nervousness, worry, and activation/arousal of the autonomic nervous system (e.g., 'I am presently worrying over possible misfortunes', 'I feel secure'). All items were rated on a 4-point Likert scale (e.g., 'not at all' to 'very much so'); with higher scores indicating higher anxiety. We aggregated all 20 items into one overall anxiety measure ($\alpha = .86$; some items were reverse-coded).

Disclosure

Participant statements were coded for quantity of information, determined by the total units of information provided. For example, the statement: "I was in an alleyway, I recognized it was an alleyway because the big tall buildings either side, brick buildings that, and there was some garbage and rubbish bins", contained 5 details. We also coded for quality of the statements based on the amount of crime-related details provided (i.e., details such as descriptions of the shooter, conversations between shooter and victim). For example: "[…] I would say he was wearing jeans and some sort of a brown jacket" contained 3 crime-related details. Lastly, the quality of the statements was also evaluated based on completeness (i.e., how much of the key information the participant included in their statement). Completeness was

measured via an inventory consisting of 12 key aspects of the crime (e.g., alleyway location, presence of another potential witness at other end of alley, victim had a watch). Two research assistants were trained on coding and practiced using a sub-sample of the participant's statements until they reached an acceptable agreement. Once the coders were reliable, the main coder coded all participant responses, and the second coded 20% of the sample to establish interrater reliability. Both coders reached high agreement for total units of information provided, single measures intraclass correlation coefficient (ICC = .96, 95% CI [.89, .99]), crime-related details provided (ICC = .95, 95% CI [.85, .98]), and statement completeness (ICC = .92, 95% CI [.76, .97]).

Data Analyses

Missing data occurred at a low frequency for some of the interaction questionnaire measures - one participant did not fill out 10 of the questions and two participants did not fill one of the questions. Missing data were assessed using Little's Missing Completely at Random (MCAR) test, which was not statistically significant, χ^2 (142) = 147.52, p = .358, indicating no evidence of bias due to missing data. Missing data were therefore replaced using an expectation maximization algorithm.

We compared the home and the formal interview settings using a series of *t*-tests. Analyses were supplemented by a Bayesian analysis and JZS Bayes factors (BFs) were computed. The JZS BF computes the likelihood of the observed data under the null hypothesis compared to the alternative hypothesis, quantifying the degree to which the data favor one of the two hypotheses (Harms & Lakens, 2018; Quintana & Williams, 2018). As reported in the present study, BF_{01} denotes

evidence in favor of the null, and BF_{10} denotes favor for the alternative hypothesis. We interpreted our results according to the cut-offs thresholds provided by Jeffreys (1961). A BF of 1 indicates that the data is equally likely under both models, BFs between 1 and 3 suggest weak evidence, 3-10 suggest substantial evidence, 10-30 suggest strong evidence, 30-100 as very strong evidence, and 100+ as decisive evidence. Bayesian *t*-tests were computed with the default Cauchy's prior with scaling factor = 0.707 (Lakens, 2016).

Results

Disclosure

An independent-sample *t*-test was conducted with interview location (home vs. formal) as the independent variable and units of information as the dependent variable. Against our expectation, participants in the home condition provided a similar amount of units of information (range: 32-109, $M = 39.69$, $SD = 13.44$) to those in the formal interview room condition ($M = 44.74$, $SD = 15.91$), $t(72) = 1.47$, $p = .15$, $d = .34$, 95% CI [-11.92, 1.81]. The BF_{01} of 1.65 provided more – albeit weak – support for the lack of an effect on units of information. Moreover, participants in the formal interview room condition reported a similar amount of crime-related details (range: 12-78, $M = 32.18$, $SD = 11.57$) to participants in the home condition ($M = 28.14$, $SD = 10.84$), $t(72) = 1.54$, $p = .13$, $d = .36$, 95% CI [-9.25, 1.18], $BF_{01} = 1.50$. Participants interviewed in the interview room (range: 5-12, $M = 9.13$, $SD = 1.76$) also did not differ from those interviewed at home ($M = 8.74$, $SD = 1.48$) in terms of statement completeness, $t(72) = -1.01$, $p = 0.32$, $d = .24$, 95% CI [-1.14, .37], $BF_{01} = 2.68$. Therefore, we rejected our first hypothesis.

Rapport and Interview Experience

We expected participants interviewed in their home setting to report experiencing more positive rapport. Our second hypothesis was not supported, with participants in the home condition (range: 93-181, $M = 141.03$, $SD = 18.18$) perceiving similar rapport levels as those in the formal room condition ($M = 134.87$, $SD = 21.83$), $t(72) = 1.31$, $p = 0.19$, $d = .30$, 95% CI [-3.20, 15.53], $BF_{01} = 1.99$.

Regarding overall interview experience[3], participants in the home condition reported feeling more at ease ($M = 6.00$, $SD = 1.24$) than those in the formal interview room condition ($M = 5.02$, $SD = 1.29$), $t(72) = 3.312$, $p = .001$, $d = .77$, 95% CI [.39, 1.56] and a $BF_{10} = 22.27$ provided strong support. Participants at home reported feeling more in control ($M = 5.74$, $SD = 1.34$) than those in the formal interview room condition ($M = 3.39$, $SD = 1.21$), $t(72) = 7.98$, $p < .001$, $d = 1.84$, 95% CI [1.77, 2.95], $BF_{10} = 3.89$. As expected, those in the home condition also reported it as more pleasant ($M = 5.40$, $SD = 1.47$) than those in the interview room condition ($M = 3.72$, $SD = 1.27$), $t(72) = 5.25$, $p <.001$, $d = 1.22$, 95% CI [1.04, 2.32], $BF_{10} = 9623.94$.

State Anxiety

Participants in the home condition experienced similar amounts of state anxiety (range: 21-59, $M = 34.68$, $SD = 8.19$) to those interviewed in the formal interview room ($M = 35.95$, $SD = 8.13$, $t(71) = -.664$, $p = 0.509$, $d = -.16$, 95% CI [-5.09, 2.55]), a BF_{01} of 3.42 indicated substantial evidence in favor of the null hypothesis, thus we also rejected our third hypothesis.

[3] The other eight questions yielded non-significant results: Confined ($t(72) = .376$, $p = .708$), Suffocated ($t(72) = .962$, $p = .339$), Spaciousness($t(72) = .661$, $p = .511$), Ease of self-disclosure ($t(72) = .108$, $p = .914$), Uncomfortable providing information ($t(72) = -.362$, $p = .718$), Inhibited ($t(72) = -1.757$, $p = .083$), Uncomfortable in environment ($t(72) = 1.589$, $p = .116$), and I feel like leaving ($t(72) = 1.361$, $p = .178$).

Discussion

This study investigated whether interviewing witnesses at their homes, instead of in a formal interview room, would be beneficial for the interview outcomes (e.g. disclosure of information). Participants in the home interview condition reported feeling more at ease, more in control, and also reported it as more pleasant than those in the formal interview room condition. We did not, however, find differences in perceptions of rapport or level of state anxiety experienced between the two locations, nor did interview location result in significant differences in the amount of crime-related disclosure, and thus, we rejected our hypotheses.

The lack of differences in the amount of crime-related disclosure between the interviews conducted at home and in the formal interview room could have practical relevance. Witnesses are interviewed in locations outside of formal environments for a variety of reasons - one being convenience. According to the Cognitive Interview, investigators generally choose an interview location that is convenient for the witness, which can include their homes (Fisher & Geiselman, 1992). Home interviews may also be of convenience for the investigator - if an officer is already close to the witness' home, it may be opportune for them to stop by (Ofc. J. Hoeijmakers, personal communication, August 29, 2018). Unlike in our study, the practical reason for interviewing a witness may thus not always be to improve the quality of the interview. Based on our findings, there may be no risk of losing critical information or negatively influencing rapport-building if interviews are conducted at home instead of a formal interview room. Thus supporting home interviewing for convenience factor.

Our participants in the home condition reported feeling more in control and at ease than participants in the formal interview condition, yet this did not translate to differences in our measurement of rapport. As a result of the lab-based paradigm, our study may have failed to elicit the interpersonal discomfort associated with being interviewed as a witness to a real crime. This could also explain why we found no differences in situational anxiety between the conditions. Nonetheless, the current study provides evidence indicating that manipulating the interview environment can change interviewees' perceptions of the interview's dynamic (e.g., feeling of control) and their affective experience (e.g., feeling at ease). Future studies could employ a paradigm with higher stakes and examine more closely how factors such as control and ease influence witnesses' disclosure and perceptions of rapport.

Relatedly, the operationalization and measurement of rapport has been the topic of recent discussions in the psycholegal field (e.g., Duke, Wood, Bollin, Scullin, & LaBianca, 2018), acknowledging the lack of consensus regarding what specific aspects interviewees perceive as rapport. In the absence of a generally accepted construct, there is room to explore how other concepts relate to rapport. Interviewees' feelings of control, for example, could be a strong predictor for their positive perception of rapport (i.e., a positive investigator-interviewee relationship) as conceptualized by Collins and colleagues (2002). Rapport building can only happen if the investigator relinquishes some of their authority and share the control of the interview with the interviewee (Brimbal, Kleinman, Oleszkiewicz, & Meissner, 2019). However, to what extent control and rapport intertwine remains to be empirically examined, and thus we encourage further work on disentangling the two constructs.

Moreover, Vallano and Schreiber-Compo's (2011) examination of rapport builds on the premise that a comfortable witness is a better witness, yet comfort is not one of the characteristics included in the interaction questionnaire used as a measure of rapport in the current study. This also presents a venue for rapport research, providing a closer examination of how positive affective experiences (e.g., "being at ease") relate to interviewee's perceptions of rapport, and establishing their diagnostic value for measuring rapport.

An important limitation to this study was that we based our sample size on a large effect size estimate. It is possible that a smaller effect size estimation – or a larger sample – was needed to detect significant differences between conditions. Moreover, participants knew they would be interviewed about what they had witnessed in the VR scenario. Knowing that they were going to be interviewed may have led them to be hypervigilant or rehearse their memory in preparation for the interview during the week. This situation differs from real witness situations, where the crime occurs unexpectedly and may not be as well remembered. Participants' hypervigilance or rehearsing may have masked any effects of interviewing location on quantity and quality of information provided.

Further, in our study we randomly assigned the participants to either location. Although we hypothesized that home interviewing would be beneficial for rapport and information disclosure, having police officers in one's house may also be distressing and hinder disclosure. Future studies could consider a more individualized approach, for example, by giving the witness the choice of where they would feel more comfortable being interviewed. Future studies should also account for potential

individual (e.g., witness' vulnerabilities) or crime-related (e.g., nature and location of the crime) factors that ought to be considered when choosing the interview location.

Similarly, future studies could also look into how other environments can help with different interview goals, for instance, to increase cooperation from reluctant witnesses. Based on anecdotal data, we know that investigators consider different locations for this purpose. A senior investigator from The Hague's Police Unit in the Netherlands stated that when handling reluctant witnesses, he does not interview them at the station, but rather takes them out for coffee to instill trust and create a relationship – or rapport – with the witnesses (De La Fuente Vilar, Horselenberg, & van Koppen, 2018).

Additionally, researchers could explore the role of distractions. In their review of U.K interviewing practice, Clarke and Milne (2001) addressed the potential shortcomings of conducting investigative interviews at homes, arguing for the lack of control that the investigator has on possible distractions (e.g., noise, family members interrupting). The authors recommended conducting interviews at police stations instead, where the investigator has more control. While in our study the investigator did not observe salient distractors and interruptions (e.g., family member interrupting), it would be beneficial to systematically examine to what extent distractions can be detrimental. This is of particular relevance given the introduction of body-worn cameras to aid interviewing efforts. By using cameras to audio and video record the interviews, frontline officers can focus on maintaining the flow of the information disclosure (Westera, Kebbell & Milne, 2011). The introduction of body-worn cameras allows for witness interviews to be conducted in several different environments such as roadsides and workplaces. It would then be useful to

empirically test how to effectively conduct interviews in more distraction-prone environments (Westera & Powell, 2016).

In conclusion, our study is the first to empirically examine the practical question of whether different environments can influence witness interviews. We did not find evidence for an effect of interview location, which suggests that our two locations did not differ in influencing interview outcomes. This proposes the practicality of interviewing witnesses outside the police interview room if it is deemed as more convenient. Nonetheless, since being the first study in this area, we encourage academics to continue delving into this topic to help establish evidence-based recommendations. Research on interview environments has high practical relevance for police investigators. By understanding if and to what extent the interview environment can influence the interview process and its outcome, it will allow us to provide practitioners with feasible recommendations that require minimal training efforts and are cost-efficient for improving investigative interviewing practice.

CHAPTER 4

DETAINEE AND LAYPERSON'S PERSPECTIVES AND PREFERENCES REGARDING POLICE INTERVIEW ROOMS

This chapter draws from the following manuscript:

Hoogesteyn, K., Meijer, E.H., Vrij, A. (2019). *Detainee and layperson's perspectives and preferences regarding police interview rooms.* Manuscript under review.

Abstract

Emerging research on how suspects perceive the physical environment during investigative interviews yields contrasting findings. While previous studies have suggested that a room made to be physically comfortable may be optimal for interviewing suspects, another study found it can instead lead to higher suspicion of the investigator's intentions. In this study, we examined current detainee's and general population participants' belief about a room that resembled a "typical" interview room, and one decorated to be warm, inviting, and comfortable.Participants also provided descriptive information about their perceptions of police interview environments (e.g., preferences, expectations). We hypothesized that the decorated room would elicit higher ratings of suspicion and wariness compared to the "typical" room. Our findings showed that, overall, participants expected to be interviewed in the "typical" room but preferred the decorated one.. Contrary to our expectations, they rated the "typical" room higher on feelings of suspicion than the decorated room.

The decorated room also corresponded with what participants reported to be an environment that promotes disclosure. These results bode well for conducting investigative interviews in comfortable environments.

Keywords: Interview rooms; interview environment; detainees; self-report; expectancy violation theory.

Detainee and Layperson's Perspectives and Preferences Regarding Police Interview Rooms

Investigative interviews are vital to successful police investigations, and substantial psycholegal research focuses on the interpersonal dynamic between suspects and investigators. This interpersonal dynamic largely relies on the communication between the suspects and investigators (Yeschke, 1997), and academics have provided a plethora of recommendations for proper questioning techniques (e.g., use of open-ended, non-suggestive questions; Clarke & Milne, 2001), as well as for developing a constructive investigator-suspect relationship (i.e., through rapport-building, Abbe & Brandon, 2013). Yet, one factor of the communication process that has been overlooked thus far is the environment in which the interviews occur.

That the physical environment affects the quality of communication becomes clear from other communication research (e.g., Hartley, 2002; Knapp, Hall, & Horgan, 2013). For example, if a conversation takes place in a room with harsh lighting, it can lead to eye-strain or fatigue, which can then cause the communicators to feel irritable or unsettled, which in turn can cause hostility during the conversation (Hartley, 2002). Further, studies from the healthcare field, for example, have found that clients' self-disclosed more personal details when interviewed in a 'soft', intimate environment (decorated with pictures, comfortable chairs, soft-lighting) compared to a 'hard', non-intimate environment (block walls, uncomfortable chairs, fluorescent lighting; Chaikin, Derlega, & Miller, 1976). Similarly, Gifford (1988) found that a room decorated more home-like (as opposed to office-like) fostered more communication concerning general and intimate topics (e.g., sexuality). The

overarching model in these studies is that comfortable, pleasant environments encourage more social interaction than sterile environments (Gifford, 1988).

The positive findings from communication and healthcare fields may translate to an investigative interviewing context, and a few studies on the physical environment specific to investigative interviews have emerged. From examining interviews with high-value detainees, Goodman-Delahunty and Sivasubramaniam (2013a) identified aspects that can be strategically used by investigators to exert coercion (e.g., the use of physical restraints, isolation, and extreme temperatures) or non-coercion (e.g., soft furnishings, having refreshments available). The authors found that detainees rated their disclosure to be higher when interviewed in a comfortable environment (i.e., with non-coercive physical aspects present), noting that the comfortable environment may have fostered better rapport, which in turn facilitated disclosure (Goodman-Delahunty et al., 2014).

Moreover, two laboratory studies – reported in Dawson, Hartwig, Brimbal, and Denisenkov (2017) – examined whether physical aspects could prime feelings of "openness" and lead to higher information disclosure in a mock-crime scenario. The "openness" manipulations included the room layout (i.e., a spacious setting), as well as décor that was metaphorically consistent with being "open" (i.e., pictures of open scenes, an open book). The interviews either took place in a larger room decorated with the openness primes, or a smaller undecorated room. Participants interviewed in the larger room provided a higher amount of crime-relevant information than those interviewed in the smaller room. In one of their studies, these results were mediated by participants' perceptions of spaciousness – perceptions of greater spaciousness increased the odds of disclosure (but see Hoogesteyn, Meijer, & Vrij, 2019). Thus,

the benefits of the spacious environment depended on the participants own perceptions and actively interpreting the spaciousness as more comfortable.

A more comfortable environment may, however, also have an adverse effect on the quality of an investigative interview. In their second study, Dawson et al., (2017) found that participants interviewed in the decorated room expressed higher perceptions of suspicion, decreasing information disclosure. A possible explanation for these findings is that the decorated room did not match participants' expectations of a police interview setting, causing them to worry about the investigator's suspicion against them.

The Expectancy Violations Theory (EVT; Burgoon, 2009) could explain this suspicion. EVT is an interpersonal communication theory, which posits that violations of our expectations can be positive or negative. Positive violations can elicit desirable, positive outcomes that are more advantageous than confirmations, while negative violations can elicit undesirable reactions, of less advantage than a confirmation (Burgoon, 2009). According to the EVT, individuals use these expectations to inform their perceptions and frame their interactions with others (Burgoon, 2009). In Dawson and colleagues' case, if interviewees were exposed to a room that was 'nicer' (i.e., decorated) than what they expected, it could have elicited a negative expectancy violation, resulting in higher suspicion and the decreased odds of disclosure following from that.

The Present Study

Determining how police interview environment are perceived by suspects can provide insight into how interview rooms should be designed. Because perceptions of suspicion can be counter-productive to communication (Burgoon et al. 1996), we

were interested in examining whether Dawson et al.'s (2017) results would replicate – that is, if individuals would report a comfortably decorated interview room to elicit higher feelings of suspicion. To examine this, we asked participants to compare two rooms, one resembling a "typical" interview room, and one decorated to be warm, inviting, and comfortable. We predicted that participants would expect to be interviewing in the "typical" room and, stemming from Dawson et al.'s (2017) findings, would rate the decorated room higher on suspicion compared to the "typical" room.

Further, we were interested in an additional exploration of what individuals' expectations are of what police interview rooms look like, and to also gather their interview room preferences.

We collected data from two groups – the general population as well as from current detainees. We gathered responses from current detainees because they are the most representative of the 'target' individual during investigative interviews. While majority of the research on interview strategies have relied on police investigator's data (e.g., Kassin et al., 2007; Kelly et al. 2015; Miller et al. 2018) few studies have examined detainees' perspectives (see Cleary & Bull, 2019, and Goodman-Delahunty, et al. 2014 for exceptions). Gathering information from the target population is essential, as cooperation is ultimately the suspect's decision, researchers must then also examine what suspects think of the interview to obtain a more complete picture of what occurs in the interview room (Cleary & Bull, 2019).

Methods

Participants and Procedure

This study was approved our university's ethical committee. All data and materials are available through the Open Science Framework (OSF; https://osf.io/fbkmw/?view_only=8924aa93aa9649a0b063c2e0d063618f).

Detainees – We recruited responses from 82 detainees. Their age range was 16 to 69 years (M = 32.32 years, SD = 13.73) and the majority were male (62 males, 19 females). Forty-four participants in our detainee sample reported having been interviewed by police for past charges. Of those who provided the reason for the interviews, sixteen were due to theft, nine due to drug-related charges, six due to violating a restraining order, two due to quarreling, one for driving without a license, one for scamming, and one for being an accomplice.

All detainees were recruited from one detainee center in Amsterdam (NL). Detainees refer to individuals who have been arrested and are placed in custody for a set period of time, pending further development in their case (e.g., an official interview, a hearing, displacement to jail). The recruitment of the detainees took place within three months, in which a research assistant from the Dutch Police Academy approached incoming detainees' cells and asked if they were willing to participate voluntarily in a research study. Some detainees had been detained for a day, others had just been arrested and placed in custody. The research assistant first provided detainees with an explanation of the study and asked for verbal consent. After consenting, the research assistant first asked the detainee how they were doing that day and proceeded to provide each question verbally while writing down the responses. Upon completion, the detainees were provided with an email address in case they had any questions or concerns and were thanked for their participation.

General population – We gathered a hundred and one responses through Amazon Mechanical Turk (M-Turk), where the study was advertised as looking for people's thoughts regarding police interview rooms in exchange for 1USD. Twenty-two responses had to be excluded due to not properly responding to the open-ended questions, either by entering numbers or random sentences that were not consistent with the prompted question. Thus, our final general population sample consisted of 79 participants. Their age range was 20 to 58 years (M = 31.57 years, SD = 8.94), the majority were male (49 males, 30 female). Before the survey started, we asked participants whether they had been previously questioned by police; those who said yes were excluded from participating. Our exclusion criteria were pre-registered through the OSF.

Survey – The questionnaire comprised six questions (see Appendix D for full questionnaire). Two open-ended questions gathered 1) what participants' expectations were of interview locations, and 2) what they thought this location should look like in order to promote disclosure. We then presented participants with photos of two nearly identical rooms of the same size. These photos were provided to us by Kelly, Dawson, and Hartwig (2016) from the Southwest Detectives Division of the Philadelphia Police Department (U.S.A). One of the photos depicted an interview room in its current form, with no decorations, fluorescent lighting and uncomfortable chairs (which we refer to from now on as the "typical" room; see Figure 1). The other photo depicted a second room that was changed and decorated in order to make the space more inviting, comfortable, and warm by including office-like decorations, warm lighting, and comfortable chairs (we refer to this room as the "decorated" room; see Figure 1).

For each room, participants were asked to indicate how it made them feel from a selection of 3) seven positive (i.e., comfortable, able to speak freely, cooperative) and 4) negative (i.e., suspicious, constrained, ready to get out, wary) characteristics, presented via 7-point Likert-type scales (1 = *not at all* to 7 = *extremely)*. The presentation of the two room photos was counterbalanced. Participants were then 5) asked to choose which of the two rooms most accurately represented what they expected an interview room to look like as well as 6) which room they preferred to be interviewed in, providing open-ended explanations for why.

We then combined the 7 characteristics into composite ratings, determined by both face-validity and high correlational values. "Suspicious" and "wary" were combined to form an overall suspicion score ($r = .645$, $p < .001$), "able to speak freely" and "cooperative" were combined to form an overall cooperation score ($r = .736$, $p < .001$), "constrained" an "ready to get out" were combined to form an overall constrained score ($r = .543$, $p < .001$), we left "comfortable" on its own, and this is a more general characteristic (see Table 1 for all correlation values).

Table 1. *Inter-correlations* (*Pearson's) between all 7 room characteristics*

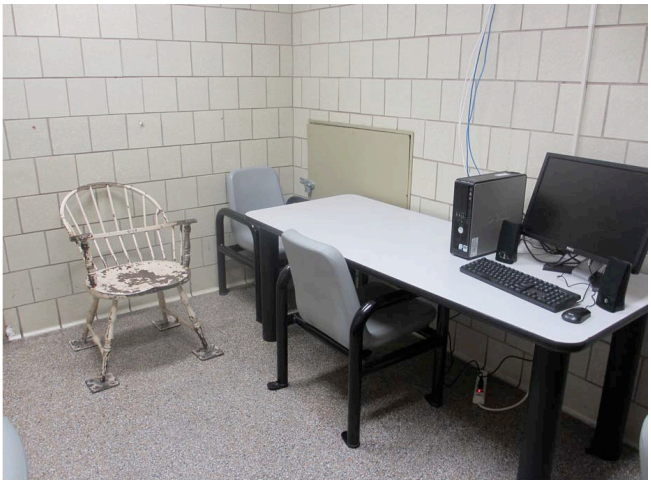
	Comfortable	Suspicious	Constrained	Able to speak freely	Cooperative	Ready To Get Out	Wary
Comfortable	-	-.374**	-.447**	.548**	.478**	-.493**	-.332**
Suspicious	-.374**	-	.467**	-.352**	-.284**	.400**	.645**
Constrained	-.447**	.467**	-	-.379**	-.300**	.543**	.411**
Able to speak freely	.548**	-.352**	-.379**	-	.736**	-.394**	-.377**

Cooperative	.478**	-.284**	-.300**	.736**	-	-.362**	-.376**
Ready to get out	-.493**	.400**	.543**	-.394**	-.362**	-	.329**
Wary	-.332**	.645**	.411**	-.377**	-.376**	.329**	-

** $p < .001$.

Coding – All open-ended, unstructured responses to room expectations and preferences were coded into data-derived categories that best represented the data. The first author went through all the responses and coded them into categories. A second independent coder then checked 20% of the responses for interrater reliability purposes, achieving acceptable reliability with percent agreements between 90% and 100% across all categories.

Figure 1. *Pictures of the "typical" and decorated rooms*



Results

The detainee sample included a lot of omitted items, particularly for the open-ended questions. Therefore, the number of categories endorsed do not equal the sample size. All percentages represent the proportion of respondents who answered the question as opposed to the whole sample, the number of respondents (*n*) is noted next to all percentages. We had no omitted items from the general population, therefore the percentages represent the whole sample.

Interview Room Expectations

We asked participants to select which of the two rooms (i.e., decorated vs. typical) they would expect to be interviewed in as a suspect in a criminal case. As expected, the majority selected the typical room over the decorated one. Among detainees who selected the typical room (73%; *n* = 74), the explanation most frequently reported was that the decorated room looked too comfortable to be a suspect interview setting (*n* = 20), followed by that statements that the typical room simply reflected what an actual interview room looks like (*n* = 14), and that the typical room looked more authoritarian, stricter, or colder (*n* = 3). Of those participants who selected expecting to be interviewed in the decorated room (27%; *n* = 74) the most cited reason was that the typical room looked old and outdated (*n* = 11). A less frequently reported reason for expecting the decorated room was that it was more spacious than the typical room (*n* = 2).

Among the general population sample, 84.1% reported expecting to be interviewed in the typical room, with the most provided reason being that it resembled what they see on television (*n* = 21), that the decorated room looked too comfortable to be a suspect interview room (*n* = 17), and that the typical room

reflected authority, strictness, or the coldness associated with suspect interviews (n = 17). Of those that reported expecting to be interviewed in the decorated room (15.9%), the most reported reason was that it looked more comfortable and humane (n = 7). As one participant wrote: *"[the decorated room] is more comfortable. When you investigate anyone, to try to speak freely, you don't scare him.... [the decorated room] looks like home, then they will speak freely"*.

Interview Room Ratings

We hypothesized that participants from both groups would rate the decorated room higher on suspicion compared to the typical room**.** Since we were interested in examining how individuals compared the two rooms across the characteristics (i.e., suspicious, comfortable, constrained, cooperative), we conducted a series of within-subjects *t*-tests with the detainee sample and the general population sample analyzed separately (presented in Tables 2 and 3). Opposite to our expectation, detainees rated the typical room significantly higher on suspicion (M = 5.61, SD = 1.23) compared to the decorated room (M = 4.66*,* SD = 1.41); $t(78) = 6.54$, d = 0. 72, $p < .001$, 95% CI [.66, 1.24]). The general population participants also rated the typical room higher on suspicion (M = 4.79, SD = 1.48) compared to the decorated room (M = 3.13, SD = 1.62; $t(78) = 7.67$, d = 0.86, $p < .001$, 95% CI [1.23, 2.09]). Therefore, we rejected our hypothesis.

Both detainees and general population participants also rated the decorated room higher on feelings of comfort and cooperation, and lower on feelings of constraint, compared to the typical room (Table 2 and 3). Regarding cooperation, for a more fine-grained examination, we conducted additional *t*-tests splitting the detainee participants by previous interview experience (yes/no). Detainees who had

not been previously interviewed by police reported "feelings of cooperation" significantly higher in the decorated room (M = 5.30, SD = 1.37) than the detainees who had already been previously interviewed (M = 4.06, SD = 1.63; $t(71) = 3.48$, d = 0.82, p <.001, 95% CI [.53, 1.95]). This difference was also present for cooperation ratings of the typical room, such that detainees who were not interviewed by police reported "feelings of cooperation" to a higher extent (M = 4.68, SD = 1.58) than the detainees who had already been previously interviewed (M = 3.62, SD = 1.75; $t(71) = 2.69$, d = 0.64 , p = .009, 95% CI [.27, 1.84]). Overall, previously interviewed detainees reported lower cooperation levels than those who had yet to be interviewed.

Table 2. *Within-subject comparisons of detainees' ratings for each room.*

	Typical room *M*(*SD*)	Decorated room *M*(*SD*)	*n*	*t*	*d*	*p*	95% CI
Comfortable	2.42(1.63)	5.39(1.44)	77	-12.45	1.42	< .001	[-3.45, -2.50]
Suspicious	5.61(1.23)	4.66(1.41)	79	6.54	.72	< .001	[.66, 1.24]
Constrained	4.36(1.57)	2.96(1.58)	72	8.23	.97	< .001	[1.06, 1.74]
Cooperative	4.10(1.74)	4.62(1.63)	73	-3.90	.46	< .001	[-.79, -.25]

Note. Out of the 82 detainees, not all responded to all questions, we provide the *n* for each rating.
All ratings were measured on a 1 (*not at all*) to 7 (*extremely*) Likert-type scale.

Table 3. *Within-subject comparisons of the general population sample's ratings for each room.*

	Typical room *M*(*SD*)	Decorated room *M*(*SD*)	*n*	*t*	*d*	*p*	95% CI
Comfortable	2.57(1.60)	4.61(1.64)	79	-8.61	0.97	< .001	[-2.51, -1.57]

Suspicious	4.79(1.48)	3.13(1.62)	79	7.67	0.86	< .001	[1.23, 2.09]
Constrained	5.27(1.46)	3.29(1.57)	79	8.53	0.96	< .001	[1.52, 2.44]
Cooperative	2.90(1.53)	4.64(1.49)	77	-7.65	0.87	< .001	[-2.19, -1.28]

Note. All ratings were measured on a 1 (*not at all*) to 7 (*extremely*) Likert-type scale.

Interview Room Preference

A large percentage of detainees (89%, $n = 74$) reported that, as suspects to a crime, they would prefer to be interviewed in the decorated room. Among the reasons provided, the most reported were that the decorated room was warmer or nicer ($n = 23$), more comfortable ($n = 13$), and would put them more at ease ($n = 7$) than the typical room. Other less cited reasons for preferring the decorated room was that it looked home-like ($n = 4$), more humane ($n = 2$), and more spacious ($n = 2$) than the typical room. Of the participants that selected preferring the typical room, none provided an open-ended response as to why.

Similarly, 91.5% of the general population reported preferring the decorated room. Out of the reasons reported, the most cited were feelings of higher comfort ($n = 33$), more ease ($n = 20$), more open to talk ($n = 17$), more personable or inviting ($n = 14$), and warmer or nicer ($n = 14$) than the typical room. Other less cited reasons for preferring the decorated room were that it was more humane ($n = 4$), less suspicious ($n = 2$), and homier ($n = 2$) than the typical room. For example, one participant stated: *"There is already a high base level of anxiety involved in being questioned by police officers. I don't want to be subjected to an environment that accentuates that feeling of anxiety any further, because most likely I am innocent and the last thing I want to do is give them a reason to suspect otherwise".*

Out of the 8.5% of general population participants who selected preferring the typical room over the decorated one, three participants stated that the typical room looked more "to the point", meaning that that the room's purpose was clear, as, for example, a participant stated: "*The [typical room], does not pretend to be something it is not".*

What Do People Think Police Interview Settings Look Like?

We also asked participants to describe what they thought a police interview setting looks like through an open-ended prompt. From the detainee responses, the most reported ones related to furniture (i.e., number of chairs, table present, and computers; $n = 34$), followed by the interview room being bare or unadorned ($n = 7$), resembling an office ($n = 7$), or resembling what they see on television ($n = 4$), small in size ($n = 2$), and having angry policemen inside ($n = 2$).

In the general population sample, the most reported responses also related to the interview room furniture ($n = 45$), being a bare or unadorned room ($n = 38$), small in size ($n = 18$), dark ($n = 16$), having a one-way mirror ($n = 15$), florescent lighting ($n = 9$), gray ($n = 8$), windowless ($n = 7$), having uncomfortable chairs ($n = 6$), resembling what they see on television ($n = 6$), cold ($n = 4$), and with concrete floors or walls ($n = 4$). Lastly, some of the general population participants reported the interview room as an intimidating setting ($n = 3$), as one participant described: "*Cold, empty, not much to look at. Not very comforting. A prison cell without the bars".*

What Should the Police Interview Setting Look Like to Promote Disclosure?

Participants were asked to report on what they thought an interview setting should look like to promote disclosure through an open-ended, descriptive prompt. Out of the 33 detainees who provided responses, the most reported answer was that

the rooms were fine as they currently are (n = 12), others responded that the rooms should have some color or decoration (n = 9), should have windows (n = 4), and should have items, such as coffee, water, or snacks available (n = 4). Furthermore, some detainees reported that the room simply did not matter to them (n = 4).

The general population group mostly reported that the rooms should be comfortable or relaxing (n = 22), bright (n = 16), have comfortable chairs (n = 15), and some color or decoration (n = 12). Other responses included that the rooms should resemble an office or home-like space (n = 9), have windows (n = 8), be spacious (n = 7), and overall should be inviting (n = 6). For example, one participant stated: *"I think the room should be more inviting per se. Not everyone being interviewed is necessarily guilty of a crime, so I don't feel that it's right to have them in an intimidating environment. People would probably talk more if they were treated like less of a criminal"*. Conversely, some participants reported that the rooms should look authoritarian and sterile (n = 7).

Discussion

In this study, we examined the beliefs and attitudes of detainee and general population individuals on two different police interview environments, one typical room, and one designed to be more comfortable and inviting. As predicted, detainee and general population participants mostly expected to be interviewed in the typical room, as opposed to the decorated one. However, against our expectation, the decorated room did not elicit higher suspicion or wariness compared to the typical room.

In contrast to Dawson and colleagues' (2017) suggestion that a decorated room may elicit higher suspicion because it violates participants' expectations of

what an interview room looks like, we found that while participants did believe the decorated room to appear too comfortable to be a suspect interview room, it did not result in higher suspicion. Rather, the decorated room corresponded with what the majority of them described qualitatively to be an environment that promotes disclosure, which according to participants should be relaxing, include comfortable chairs, decorations, and appear homier. If explained through the EVT, this expectancy violation was positive – that is, the unexpected room environment was interpreted as a favorable environment. Such positive expectancy violations are promising, as the EVT posits that a violation triumphs a confirmation of an expectation, as long as it is a positive violation (Burgoon, 2009). Since the decorated room did not elicit higher suspicion, and was regarded as more conducive to cooperation, we encourage academics and practitioners to closely examine how a more physically comfortable interview room could facilitate information disclosure.

Our finding that both groups preferred to be interviewed in the decorated room fits with recent interest in determining what constitutes effective police interview environments (Goodman-Delahunty et al., 2014; Meissner et al., 2015) and our qualitative data provides insight into what such an environment may be. The majority of participants indicated that interview rooms should be made more comfortable, including a general population participant who indicated, "*I'd be more open to speaking in a generally non-threatening location that is warm and promotes civil conversation"* Notably, recent data also indicates that police investigators support making interview environments more comfortable and less sterile (Hoogesteyn et al. 2020), suggesting that some current interviewing contexts should be amended. Beyond perceptions of comfort, emerging research also suggests that

detainee disclosure may be enhanced in a more physically comfortable environment (Goodman-Delahunty et al., 2014). Therefore, a more comprehensive examination of actual suspects' disclosure in different interviewing contexts is warranted.

Relatedly, we also found that both detainees and participants from the general population rated the decorated room as eliciting higher feelings of cooperation. This finding provides preliminary evidence that the interview room's environment could influence suspects' cooperation efforts, echoing Goodman-Delahunty and colleagues' (2014) findings. Of note, detainees who had previous experience with the police rated their cooperation levels lower, regardless of the room. Similarly, Snook and colleagues' (2015) found that detainees' self-reported levels of cooperation were lower when they had previous experience with the criminal justice system compared to those who had not. It is possible that their (possibly negative) previous experience, and the circumstances of findings themselves again in police custody, makes them cautious, even distrustful, of reporting on cooperation. However, this must be taken with a grain of salt as we relied on self-reports, and studies that incorporate other forms of objective data, such as the actual amount of information disclosure, should be conducted to better assess how self-reported levels of cooperation predict actual cooperation

Another direction for future studies is to more closely examine investigators' thoughts about interview environments. While our study focused on suspects' expectations and preferences, investigative interviews are dynamic and bi-directional interactions. It is possible that a decorated room negatively violates the expectations of investigators, depending on the interview room they are accustomed to conducting their practice in. Future studies should also account for how investigators perceive

the environment, and whether this influences their interviewing behavior (see Kelly et al. 2019).

This study was subject to limitations. First, our design was analogous to a vignette study, asking participants to rate and compare two interview room photos. While this design made it feasible to obtain data from the detainee population, vignette studies also limit the level of involvedness participants may experience (Hughes & Huby, 2012). Additionally, the data collection method for our two samples differed. Detainees were asked the questions in person for no compensation at the detention center, while MTurkers completed the questionnaire online and with a small monetary compensation. There is recent interest on the methodological validity of MTurk studies compared to data collected via conventional methods (e.g., data collected personally by the researchers). Thus far, the quality of MTurk data has shown to be acceptable and equivalent to data collected with conventional methods (Crump et al. 2013; Kees et al. 2017). We also found that our MTurk data were more complete, while detainees provided less detailed responses and had higher rates of missing data. However, the difference in response rates may be due to the current situation of the detainees, as well as other individual variables (e.g., lack of sleep, mental illness).

To conclude, we found that detainees and general population individuals expected a police interview setting to resemble a typical room, that is, including the bare minimum furnishings (i.e., a table, chairs) and to be simple, sterile and undecorated. Yet, they reported preferring an interview room to be decorated, warm, and comfortable, in order to create an environment that fosters information disclosure. Against our expectations, and previous findings by Dawson and

colleagues (2017), being presented with a decorated, as opposed to a typical room, did not appear to negatively violate participants' expectations of a suspect interview room. Rather, we found that the expectancy violation was positive. Thus, future studies should examine how a more nicely decorated, physically comfortable, environment may be useful for facilitating the suspect-investigator relationship as well as for eliciting information. For example, in this survey, participants mentioned that decorations, colors, comfortable chairs, and windows are aspects that can help create an atmosphere conducive to disclosure. These alterations are feasible and largely under the control of practitioners (Goodman-Delahunty et al., 2014) and can offer implications for planning interviews and (re)designing police interview rooms.

CHAPTER 5

UTILITY AND EFFECTIVENESS OF THE CONTEXT MANIPULATION TECHNIQUES: POLICE INVESTIGATORS' PERSPECTIVES

This chapter draws from the following manuscript:

Hoogesteyn, K., Meijer, E., & Vrij, A. (2020). Utility and effectiveness of the context manipulation techniques: police investigators' perspectives. *Journal of Police and Criminal Psychology*, 1-8.

Abstract

The foremost goal of conducting an investigative interview is to obtain as much accurate information as possible. To achieve this, investigators employ a variety of interviewing techniques. Kelly, Miller, Redlich, and Kleinman (2013) proposed a taxonomy interviewing techniques, grouping them into six domains (i.e., Rapport and Relationship Building, Context Manipulation, Emotion Provocation, Collaboration, Confrontation/Competition, and Presentation of Evidence). In this study, we focused on assessing the Context Manipulation domain (e.g., considering seating arrangements, time of day, clothing). Specifically, we sought to examine police investigators' use and beliefs about the effectiveness of context manipulation techniques. A sample of 81 police investigators completed the survey. Our findings provide evidence that investigators believe the interview setting to have importance, and are already employing some context manipulation techniques – particularly related to seating arrangement, investigators' clothing, and item availability for suspects (e.g., water, cigarettes). Moreover, this survey provides evidence that investigators are receptive to using context manipulation techniques in their practice, despite how little they are currently taught during trainings. Understanding what context manipulation techniques investigators use and believe to be useful in their interviewing practice may have implications for future training, as well as for the (re)design of interview rooms.

Utility and Effectiveness of the Context Manipulation Techniques: Police Investigators' Perspectives

Investigative interviews are complex and dynamic social interactions (Kelly, Miller, & Redlich, 2016) and investigators must prepare how to best manage the flow of information with the suspect. Part of this preparation involves considering the setting in which the interview occurs – or *context management* (Brandon, Wells, & Seale, 2018). Contextual aspects are thus related to the physical environment, and examples include, the furniture arrangement within the interview room, the room size, physically isolating the suspect, and the investigators' physical appearance. Because police investigators can manipulate these aspects to aid their interviewing practice, Kelly and colleagues (2013) referred to these contextual factors as context manipulation techniques.

Context management is mentioned in some North American police manuals, in criminal investigations, the Reid manual provides specific recommendations for how to arrange the interview room. For example, the lighting should not be excessive or glaring, there should be no distractions (e.g., no wall decorations, no loose objects like paperclips). Moreover, the seating arrangement between the suspect and interviewer should be at a close distance (approximately 122 cm)with no desk or table separating them – so to facilitate the detection of deception through the suspect's body movements. Additionally, the investigator should be dressed in civilian clothes if possible, rather than in uniform, so as to reduce the suspect's stress level (Inbau, Reid, Buckley, & Jayne 2013). Besides Reid, other interviewing manuals also take contextual manipulations into account. In the military setting, the US Army Field Manual (2-22.3, 2006) cites the change-of-scenery approach as a

recommended technique to obtain information. Contrary to the Reid method, this approach consists of removing the suspect from a formal and intimidating atmosphere (i.e., interview room) and placing them in a setting where they may be more comfortable.

To what extent context manipulation is used in police's interviewing practice been a subject of a few law enforcement surveys. For example, Kassin et al. (2007) questioned 631 North American investigators on the most frequently used interrogation techniques, and found the two most used were, in fact, contextual techniques. These techniques corresponded well with the Reid method: physically isolating the suspect from family and friends (66%) and conducting the interrogations in a small, private room (42%). In a more recent international survey, Miller, Redlich, and Kelly (2018) found that police investigators from European countries (U.K, Finland, Ireland, Netherlands, and Norway), and Oceania (Australia and New Zealand) reported manipulating the context at a lower rate than U.S and Canadian investigators. As for specific contextual manipulations, across all countries, the most frequently used were considering the time of day for the interview, strategically positioning the suspect in a specific part of the room, and, similar to Kassin et al. (2017), conducting interviews in a small room.

While these studies provide information on the prevalence of context manipulation techniques, it remains unclear why investigators employ these techniques or what their beliefs are on their usefulness and effectiveness. The goal of the present study was thus to provide a focused assessment of police investigators' use and beliefs regarding contextual aspects. To achieve this, we asked investigators the degree to which they consider the interview context to be important, and to report

on contextual aspects they already consider prior to interviews. We then focused on the specific contextual manipulation techniques proposed by Kelly et al. (2013), to gauge the degree to which investigators consider these techniques useful and effective.

The findings from this survey are important for two reasons. First, emerging research hints at positive effects of context manipulations in interview quality. Dawson and colleagues (2017) manipulated the interview room's size and found that larger physical spaciousness resulted in higher information disclosure. Similarly, Hoogesteyn et al. (2019) found that interviewees who perceived the interview room as more spacious also reported more positive perceptions of rapport-building. Yet, these studies have focused on just one (i.e., physical spaciousness) of the many contextual aspects relevant to investigative interviewing practice. The data from this survey may yield useful insight on what other contextual aspects are deemed important by police investigators and could be considered for future research. Secondly, contextual aspects should be accounted for when designing interview rooms. If useful, contextual aspects are feasible to manipulate (e.g., re-arranging the room's furniture), and may not require extensive training efforts for investigators. Again, data from this survey may yield important information on what aspects to consider when (re)designing interview rooms.

Method

Participants

A total of 81[4] responses were included in this study. The majority of the sample was male (n = 49), with an average age of 44 years (SD = 9.80, n = 79). The sample comprised officers from five countries, majority of which came from Europe (n = 61), more specifically, Sweden (n = 31, 38.3% of total sample), and the Netherlands (n = 29, 35.8%), with one response from England (1.2%). We gathered 20 responses from North American police officers, majority of which were from the United States (n = 12, 14.8%) and 8 came from Canada (9.9%).

All participants had interviewing experience, ranging from 1 to 40 years (M = 15 years, SD = 10.30, n = 79). Fifty-four participants (66.7%) reported receiving special training in conducting interviews. When asked to specify, some reported having received a general interviewing/interrogation course (n = 22), followed by Reid training (n = 6), PEACE training (n = 5), RCPM's Phased training (n = 5), High-value Detainee group training (n = 5), Cognitive Interview training (n = 4), RIMOZ (n = 3), and Motivational Interviewing training (n = 3).

Moreover, we asked if they were up to date with the scientific literature on interviewing, 18.5% (n = 15) of participants reported not being at all up to date, 33.3% (n =27) reported being somewhat up to date, 27.2% (n = 22) reported being moderately up to date, 13.6% (n = 11) reported being mostly up to date, and 7.4% (n = 6) reported being extremely up to date.

Procedure and Materials

[4] 124 officers began the survey; only 81 provided any information past demographics. Two of the final 81 recruited officers did not report age.

For recruitment, we approached contacts we had in each country who then distributed the online survey link among colleagues (i.e., snowball sampling). Participants received the link to the survey's secure website, along with a short explanation of the purpose of the study (see Appendix # for full survey). The survey was offered in three different languages: English, Dutch, and Swedish. After consenting, participants first completed some demographic queries (e.g., age, years of experience, current rank). The rest of the survey was divided into three sections.

Section 1 of the survey asked investigators "How important do you consider the environment/setting of the interview to be during an investigative interview?" with possible responses ranging from 1 ("*not at all important*") to 7 ("*extremely important")*. We then asked investigators to report what contextual aspects they consider at the planning stage (i.e., arranging the chairs, choosing a specific location, changing uniforms), this was through an open-ended prompt. Participants first generated their own list of techniques, and then assigned an effectiveness rating on a 7-point Likert-scale (1 = *not effective* to 7 = *very effective*) to each technique. Further, participants described the purpose of each technique they generated. Following that, participants were presented with an open-ended question "Thinking about the aims and purposes of an interview, what do you consider to be the most important characteristics when designing an interview room?".

Section 2 of the survey included the context manipulation techniques provided by Kelly et al., (2013). Four techniques were added to the original list: "Sitting at a close, intimate distance", "Make interview room appear warm and comfortable", "Make interview room appear cold and authoritarian", and "Interview suspects outside of police station". We added these techniques based on emerging

research on interview contexts (e.g., Dawson et al., 2017; Hoogesteyn, Meijer, & Vrij, 2019). After being presented with a list, participants were asked to respond with a "Yes" or "No" on the following: "Do you consider this a technique?" and "Is this a useful technique?". If the participants thought the technique was useful, they were prompted, "For what purposes? Explain". Further, they were asked about how they learned about the techniques (i.e., "Was it taught during your trainings?") and "Is this technique available to you? Meaning this is something you can control". Participants were also requested to rate on a 7-point (1 = *never* to 7 = *always*) Likert-type scale, how often they apply the selected techniques on a regular basis. Finally, participants were asked whether they are currently satisfied with the interview rooms at their station and if not, to elaborate why. At the end, participants were debriefed and thanked for their participation. Completion of the survey took approximately 20 minutes.

Coding

All qualitative responses to open-ended questions were first translated into English by research assistants who were native Dutch and Swedish speakers. Consequently, the first author initially reviewed all responses for each question and devised appropriate general categories that best represented the data. Categories were initially informed by the context manipulation domain of Kelly et al.'s (2013) taxonomy, including categories such as: seating arrangement, clothing, conducting interview in a formal location. Data-derived categories were also formed to account for responses that did not fit into any category in the taxonomy, and included, for example, checking the auxiliary equipment and ensuring the room's cleanliness (see

Table 3 and 4 for all categories). For interrater reliability purposes, a research assistant verified 20% of the responses.

Analysis Plan

The amount of responses we were able to gather per country was too small to carry out between-country comparisons. However in some analyses, we probed into regional comparisons between the European (n = 61) and North American participants (n = 20). Given the relatively small and disproportionate groups sizes, these comparisons were conducted using statistical tests that are less sensitive to non-normal distributions, such as Chi-squares for our categorical variables (i.e., yes or no responses) and Mann-Whitney U tests for ordinal variables (i.e., Likert-type scales).

Results

Due to attrition and omission of responses, the numbers of respondents differ for some survey items. The number of respondents (n) is therefore reported and all percentages represent the proportion of respondents who answered the question.

Overall Importance of Interview Setting/Environment

Out of our total sample, 72 participants reported on how important they considered the interview setting to be on a 1 to 7 (1 = *not at all important*, 7 = *extremely important*) Liker-type scale. The majority (54.2%) considered the setting to have moderate importance. The rest of participants reported it to be extremely important (15.3%), very important (25%), slightly important (4.2%) and not important at all (1.4%).

To probe into regional differences, we conducted Mann-Whitney U test, which revealed that European participants rated the interview's setting importance (mean

rank = 41.23) significantly higher than the North American participants (mean rank = 21.21; $U = 207.5$, $z = -3.80$, $p < .001$).

Interview Setting/Environment Preparations for an Investigative Interview

Participants reported on contextual aspects they consider at the planning stage, for prior to the interviews, these resulted in17 categories (displayed in Table 1). Three most frequently mentioned were considering: Seating arrangement (i.e., interpersonal distance, chair positions), clothing (i.e., wearing informal clothes, uniform), and having items such as water, coffee, cigarettes and tissues to provide suspects with. Looking into the effectiveness scores (ranging from 1 = *not at all*, to 7 = *extremely*), the techniques were overall judged as moderately effective (the means ranged between 4.62 and 5.85; see Table 3).

The top three techniques judged as effective were limiting distractions (i.e., papers, personal items, noise; $M = 5.85$, $SD = 1.38$), the investigator's clothing (i.e., wearing casual or formal clothes depending on their aims; $M = 5.48$, $SD = 1.16$), and how the room is set up (i.e., furniture available; $M = 5.30$, $SD = .95$). Of note, the "room set up" category was broad, it was assigned to responses that alluded to arranging the room but were not specific (i.e., *"two chairs and a tabl*e") as opposed to the "seating arrangement" category which was assigned to investigators' responses that specifically mentioned the positioning of chairs or interpersonal distances.

Participants also provided the purposes for why they took each contextual consideration. Overall, investigators appear to take into account the suspect's physical comfort, especially, when providing purposes for considering the seating arrangements, having items to provide suspects with, and for conducting interviews in either a formal or more neutral location.

Table 4. *List of reported contextual considerations prior to interview*

Category	Total times mentioned	Effectiveness *M(SD)*	Purposes for using
Seating arrangement	**40**	**5.18 (1.43)**	For suspect's visibility (*n* = 7) To facilitate the interaction (*n* = 7)
European	27	5.41(1.02); *n* = 16	To increase overall comfort (*n* = 6)
North American	13	4.48(1.99); *n* = 9	
Clothing	**36**	**5.48(1.16)**	To facilitate the interaction (*n* = 7)
European	25	5.47(1.12); *n* = 15	To show professionalism (*n* = 5)
North American	13	5.50(1.30); *n* = 8	To maintain control (*n* = 5)
Have items to provide suspects with (e.g., water/tissues)	**19**	**5.21 (1.25)**	To increase suspect's comfort (*n* =19)
European	9	5.20(1.30); *n* = 5	
North American	10	5.22(1.30); ; *n* = 9	
Ensure no distractions	**15**	**5.85 (1.38)**	To limit distractions (*n* = 6)
European	10	6.42(.66); *n* = 6	
North American	5	5.00(1.82); *n* = 4	
Conduct interview in formal or neutral location	**14**	**4.62 (2.56)**	To increase overall comfort (*n* = 3)
European	7	4.33(3.05); *n* = 3	
North American	7	5.50(0) ; *n* = 1	
Check auxiliary equipment	**12**	**4.67 (1.22)**	Shows professionalism (*n* = 3)
European	8	5.17(1.16); *n* = 6	
North American	4	3.67(.58); *n* = 3	

Note – Not all participants who provided a category provided an effectiveness measure; we note the number of people who provided it next the mean and standard deviation.

Categories that received less than 10 mentions were omitted from the table. These included: the interview location (*n* = 7), the number of people inside the room (*n* = 7), removing barriers between suspect and investigator (*n* = 6), the room cleanliness (*n* = 5), the size of the room (*n* = 4), the room's safety (*n* =3), seating suspects in a comfortable chair (*n* = 3), illustrating evidence in the room's walls (*n* =1), considering the temperature (*n* = 1), considering the room lighting (*n* = 1), and removing weapons (*n* = 1).

Important Aspects When Designing Interview Rooms

Further, we asked participants to describe the characteristics they consider most important when designing interview rooms. These were fully unstructured,

open-ended responses, which we then coded into data-derived categories to best represent our data. Participants most commonly reported the importance of creating a comfortable, informal, or relaxing setting (n = 21), to account for the investigator's safety (n = 19), designing a setting free of distractions (e.g., clocks, noise from neighboring rooms, obstacles in the room; n = 15), considering chair placements (i.e., to facilitate seating arrangements; n =10), and for the interview room to be of an appropriate size (i.e., a size that is not too small to feel oppressive and not too big as to not be intimate; n =10)[5].

Beliefs about Context Manipulation Techniques

Participants were asked about thirteen contextual manipulations adapted from Kelly et al.'s., (2013) taxonomy. The results are displayed in Tables 5 and 6. All the proposed manipulations, except conducting the interview in a small room, were perceived as actual interviewing techniques by the majority of respondents.

Considering their physical appearance (i.e., wearing formal or casual clothing), the seating distance, and making the room appear warm and comfortable, were (respectively) reported to be the three most useful techniques. Conducting the interview in a small room was also reported as the least useful technique, followed by the effects of sounds and colors. These two were also the least frequently taught during trainings.

[5] Other aspects mentioned for designing an interview room included: creating a setting that is flexible and easy to adapt depending on the suspect and/or circumstances (n = 9), a neutral setting (n = 9), ensuring auxiliary equipment is functional (n = 9), having good conditions, such as ventilation and lighting (n = 6), privacy (n = 3), comfortable furniture (n = 3), and a room that reinforces the investigator's authority or control (n = 3). *We report these in a footnote as they were cited less than 10 times.

Paying attention to the physical appearance and seating distance were the most reported as being taught during trainings, as well as the most frequently used. Making the room appear warm and comfortable, although rated as third most useful, was one of the least reported as being taught in trainings.

Regarding frequency of use, we also conducted comparisons between regions and found differences on six of the thirteen context manipulations. The North American investigators reported leaving the suspects alone in the interview room at a significantly higher frequency (mean rank = 37.03) than European investigators (mean rank = 23.12; $U = 152.5$, $z = -3.15$, $p = .002$). North American investigators also reported altering specific aspects of the interview room at a higher frequency (mean rank = 37.00) than European investigators (mean rank = 23.14; $U = 153.00$, $z = -3.08$, $p = .002$), as well as considering the time of day (NA mean rank = 37.97, EU mean rank = 21.40,; $U = 104.5$, $z = -3.77$, $p < .001$. North American investigators also reported sitting at a close, intimate distance from suspect at a higher frequency (mean rank = 39.22) compared to European investigators (mean rank = 21.72; $U = 100.5$, $z = -3.86$, $p < .001$), to consider their seating distances in general (NA mean rank = 35.09, EU mean rank = 22.68; $U = 150.5$, $z = -2.78$, $p = .005$), as well as attempting to make the interview room appear more warm and comfortable (NA mean rank = 35.22, EU mean rank = 23.45; $U = 164.5$, $z = -2.63$, $p = .008$).

Table 5. *Responses to questions about the contextual manipulation techniques outlined by Kelly et al. (2013).*

Percentages reflect YES responses. Frequency of use reflects the mean (1 = never, 4 = neutral, 7 = always) and standard deviation. First columns reflect overall responses, followed by regional breakdown.

CM technique	*n*	Across countries	*n*	European	*n*	North American
Conducting interview in a small room						
Considered it a technique	54	42.6%	37	43.2%	17	41.2%
Taught during trainings	52	17.3%	35	2.9%	17	47.1%
Under their control	53	41.5%	36	38.9%	17	47.1%
Thought is useful	52	30.8%	35	34.3%	17	23.5%
Frequency of use	54	2.72(1.92)	37	2.57(1.83)	17	3.06(2.14)
Interviewing suspect in a formal room						
Considered it a technique	53	67.9%	36	66.7%	17	70.6%
Taught during trainings	51	47.1%	34	35.3%	17	70.6%
Under their control	52	71.2%	35	65.7%	17	82.4%
Thought is useful	52	65.4%	35	62.9%	17	70.6%
Frequency of use	54	4.28(2.08)	37	4.11(2.13)	17	4.65(1.97)
Leave suspect alone in room for a period of time						
Considered it a technique	53	66%	36	55.5%	17	88.2%
Taught during trainings	51	45.1%	34	26.5%	17	82.4%
Under their control	52	73.1%	35	62.9%	17	94.1%
Thought is useful	51	58.8%	34	47.1%	17	82.4%
Frequency of use	54	3.15(2.05)	37	2.54(1.89)	17	4.47(1.77)
Alter specific aspects of the physical space						
Considered it a technique	53	71.7%	36	58.3%	17	100%
Taught during trainings	51	54.9%	34	38.2%	17	88.2%
Under their control	52	71.2%	35	62.9%	17	88.2%
Thought is useful	52	69.2%	35	57.1%	17	94.1%
Frequency of use	54	4.00(2.27)	37	3.38(2.15)	17	5.35(1.97)

Consider the time of day						
Considered it a technique	53	66%	36	63.9%	17	70.6%
Taught during trainings	52	28.8%	35	17.1%	17	52.9%
Under their control	52	75%	35	74.3%	17	76.5%
Thought is useful	52	61.5%	35	57.1%	17	70.6%
Frequency of use	52	3.31(1.90)	36	2.67(1.55)	16	4.75(1.84)
Consider your physical appearance, such as clothing						
Considered it a technique	53	84.9%	36	86.1%	17	82.4%
Taught during trainings	52	55.8%	35	42.9%	17	82.4%
Under their control	52	88.5%	35	91.4%	17	82.4%
Thought is useful	52	82.7%	35	82.9%	17	82.4%
Frequency of use	53	5.11(1.75)	37	4.92(1.78)	16	5.56(1.63)
Sitting at a close, intimate distance						
Considered it a technique	53	71.7%	36	58.3%	17	100%
Taught during trainings	51	49%	34	23.5%	17	100%
Under their control	52	75%	35	65.7%	17	94.1%
Thought is useful	51	72.5%	34	58.8%	17	100%
Frequency of use	53	3.89(2.19)	37	3.14(2.04)	16	5.62(1.41)
Use a setting that is culturally attractive to the suspect						
Considered it a technique	53	56.6%	36	58.3%	17	52.9%
Taught during trainings	51	21.6%	34	17.6%	17	29.4%
Under their control	52	32.7%	35	31.4%	17	35.3%
Thought is useful	51	54.9%	34	61.8%	17	41.2%
Frequency of use	52	2.54(1.80)	36	2.33(1.64)	16	3.00(2.10)
Consider the effects of sounds and colors						
Considered it a technique	52	51.9%	36	47.2%	16	62.5%
Taught during trainings	50	18%	34	8.8%	16	37.5%
Under their control	51	17.6%	35	14.3%	16	25%

Thought is useful	50	42%	34	41.2%	16	43.8%
Frequency of use	52	2.38(1.82)	37	2.16(1.76)	15	2.93(1.91)
Consider the sitting distance between you and the suspect						
Considered it a technique	52	77.4%	36	69.4%	17	94.1%
Taught during trainings	52	59.6%	35	42.9%	17	94.1%
Under their control	52	73.1%	35	65.7%	17	88.2%
Thought is useful	52	78.8%	35	71.4%	17	94.1%
Frequency of use	52	4.52(2.14)	36	3.97(2.16)	16	5.75(1.53)
Make interview room appear warm and comfortable						
Considered it a technique	53	77.4%	36	75%	17	82.4%
Taught during trainings	51	37.3%	34	23.5%	17	64.7%
Under their control	52	44.2%	35	37.1%	17	58.8%
Thought is useful	52	76.9%	35	74.3%	17	82.4%
Frequency of use	53	3.49(2.13)	37	2.97(1.92)	16	4.69(2.15)
Make interview room appear cold and authoritarian						
Considered it a technique	53	67.9%	36	63.9%	17	76.5%
Taught during trainings	51	39.2%	34	23.5%	17	70.6%
Under their control	52	48.1%	35	42.9%	17	58.8%
Thought is useful	52	51.9%	35	54.3%	17	47.1%
Frequency of use	52	2.77(2.02)	36	2.78(2.15)	16	2.75(1.73)
Interview suspects outside of police station						
Considered it a technique	53	75.5%	36	72.2%	17	82.4%
Taught during trainings	51	39.2%	34	26.5%	17	64.7%
Under their control	52	61.5%	35	54.3%	17	76.5%
Thought is useful	51	68.6%	34	64.7%	17	76.5%
Frequency of use	52	3.35(1.86)	36	3.19(1.79)	16	3.69(2.02)

Table 6. *Open-ended responses for why each technique is useful*

CM technique	Reason
Conducting interview in a small room	Increases pressure (*n* = 3)
Interviewing suspect in a formal room	Shows the seriousness of the interview (*n* = 5) Increases comfort (*n* = 5) Limits distractions (*n* = 3)
Leave suspect alone in room for a period of time	Give suspect time to think (*n* = 15) Breaks are mentally or emotionally necessary (*n* = 7) Investigator can watch suspect's behavior (*n* = 4)
Alter specific aspects of the physical space	To limit distractions (*n* = 10) Increase safety (*n* = 7) To control the suspect's movements (*n* = 6) Facilitate interaction (*n* = 6)
Consider the time of day	Suspect should be rested/ fed (*n* = 11) Late interviews considered coercive in court (*n* = 7)
Consider your physical appearance, such as clothing	Impression management (*n* = 16), for the most part depends on the suspect and situation (*n* = 11) Casual clothes help the interaction (*n* = 10) To show professionalism (*n* = 6)
Sitting at a close, intimate distance	Shows interest or care (*n* = 12), but need to be careful with how close (*n* = 4) To appease emotional suspects (*n* = 7) Helps build bond or rapport (*n* = 4)
Use a setting that is culturally attractive to the suspect	Facilitates disclosure (*n* = 6) Helps put suspect at ease (*n* = 6) Helps build a bond or rapport (*n* =6)
Consider the effects of sounds and colors	Sounds from other rooms can be distracting (*n* = 3)
Consider the sitting distance between you and the suspect	This is dynamic, and depends on the situation (*n* = 14), and appropriate distance can help to build bond or rapport (*n* = 5), to show empathy (*n* = 5), or the seriousness of situation (*n* = 3)
Make interview room appear warm and comfortable	Helps put suspect at ease (*n* = 15) Facilitates disclosure (*n* = 8)
Make interview room appear cold and authoritarian	To increase the tension/seriousness of situation (*n* = 8)
Interview suspects outside of police station	Helps put suspect at ease (*n* = 8) Facilitates disclosure (*n* = 5) Convenience factor (*n* = 5)

Note - Categories that reached less than 3 mentions were omitted

Current Satisfaction with Interview Rooms

Lastly, 69.2% (n = 52) participants reported not being satisfied with the interview rooms at their current station. A chi-square test for association revealed that there wasn't a statistically significant association between region (European and North American) and current interview room satisfaction χ^2 (1) = 4.012, p = .058.

Among the participants who provided reasons for why they were not satisfied, the most cited reason was that the rooms are too sterile (n = 11), followed by the rooms being too small (n = 6), and not having enough options to adapt within the rooms (n = 5).

Discussion

In this study, we explored police investigators' use of context manipulation techniques, and beliefs on their effectiveness. Overall, the majority of respondents indicated the interview setting to be of importance, and to already employ some context manipulation techniques in their practice – such as considering the seating arrangements, their clothing (i.e., formal vs. casual), and having items such as water and coffee handy to provide suspects with. Investigators also indicated contextual considerations to be effective. More specifically, removing distractions (i.e., no papers, clocks, personal items), considering their clothing, and considering the room's set up (i.e., location of table) were rated as the three most effective contextual considerations.

Regarding the specific context manipulation techniques outlined in Kelly et al.'s (2013) taxonomy, majority of respondents indicated all but one (conducting interviews in a small room) to be actual techniques, but their usage frequency were rated moderate to low. This aligns with Kelly and colleagues' (2015) findings, where the context

manipulation techniques were reported among the least used. This is not surprising considering how little the context manipulation techniques were reported to be taught during trainings – although there appeared to be regional differences. Actively thinking about, and using contextual aspects of the interview as techniques, especially in Europe, may be a relatively recent notion. Rather than thinking of them as techniques, some contextual aspects may be thought of as routinely matters (Kelly et al., 2015). Nonetheless, the majority of the techniques were rated to be useful, and while this may be a result of afterthought, it shows that investigators are receptive to the use of context manipulation techniques. Therefore, contextual manipulations could be potential targets for interviewing training reform because of the positive beliefs that investigators already have.

Expanding on regional differences, similar to Miller and colleagues (2018), we found that North American investigators reported using, as well as learning about context manipulation techniques during trainings at a higher rate than European investigators did. This is perhaps unsurprising given that our knowledge about context manipulations mostly comes from North American interviewing manuals (i.e., Reid, Army Field Manual). Techniques such as leaving the suspect alone in the interview room, rearranging the room's furniture, manipulating the seating distances, and more specifically seating at an intimate distance, are all techniques stated in the Reid manual – all of which were reported as more frequently used by North American investigators. Therefore, it appears that North American investigators do implement the context manipulation techniques taught during trainings, although we note that their reported frequencies of use were still moderate.

Another possibility for the different frequencies of use between North American and European investigators is that in some European countries the room setups may be more standardized. Across the European Union (EU), which include both the Netherlands and Sweden, legal representation is mandatory in all interviews (European Parliament & Council, 2013). Moreover, audio/video recording equipment is also standard in the EU – whereas in the United States, not all states have the requirement to record the interviews (Bang, Stanton, Hemmens, Stohr, 2018). The presence of more people and more equipment inside the interview rooms may limit investigators' capacity to, for example, arrange the furniture and seating distances. Nonetheless, this is a speculative idea that would require empirical examination, and the differences in frequencies must be taken with a grain of salt given the small amount of responses we were able to collect from each region.

Investigators' overall responses aligned more with an information-gathering approach to interviewing over an interrogative or accusatorial approach. For example, make room "appear warm and comfortable" was reported to be among the most useful techniques, whereas conducting the interview in a small room was reported as the least useful technique. Further, investigators reported that leaving suspects alone in the interview room was helpful for allowing them time to think and take a mental break from the interview. This alignment with an information-gathering style is noteworthy because, for the most part, the contextual manipulations outlined in interviewing manuals can be interpreted as an attempt to exert control over suspects (Kelly et al. 2019). For example, isolating suspects and interviewing them in small rooms can create a sense of being trapped, instilling a sense of loss of control, and lean toward

psychological manipulation (Gudjonsson, 2003). Nonetheless, context manipulation techniques can be used to foster a productive investigator-suspect relationship, rather than control, and research examining this idea is moving forward (Kelly et al. 2019).

The results from this survey offer insight into what context manipulation techniques require further empirical examination. For example, based on the contextual considerations most reported, future research should examine what seating arrangements are optimal in an investigative interviewing scenario. While the Reid manual recommends a close proximity, and instructs investigators to gradually move closer to the suspect because "the closer a person is to someone physically, the closer he becomes to that person psychologically" (p. 283; Inbau et al., 2013), there is no empirical evidence to support this statement, or the benefits of close proximity. To examine contextual influences, future research will need to tease apart the dynamic nature of interviews, and isolate the effect originating from contextual aspects (e.g., seating arrangements) while controlling for suspects' individual differences and/or situational factors.

Moreover, this survey offers considerations for (re)designing interview rooms. Majority of investigators reported being unsatisfied with their current interview rooms, mostly due to the rooms' sterility. Considering that investigators spend a significant amount of their working time inside these rooms, future research should explore how such sterile environments affect investigators, their interviewing procedures, and their well-being. When asked what they considered most important for designing an interview room, majority of investigators mentioned creating a comfortable, informal, or relaxing setting. Creating a more comfortable setting may actually be beneficial for interviewing

suspects. Goodman-Delahunty, Martschuk, and Dhami (2014) found the interview setting to be linked to perceptions of non-coercion. Interviews that were conducted in a comfortable setting were associated with an increase in detainees' disclosure of incriminating information. The authors noted that the comfortable setting may have fostered rapport, which in turn facilitated disclosure.

Of note, 76.9% of investigators rated making the interview room "appear warm and comfortable" as a useful technique, while, in contrast 51.9% of respondents also reported creating a cold and authoritarian setting as a useful technique. This finding may represent a heterogeneity of opinions among investigators, but also suggests that investigators view the usefulness of the room's coldness/warmth as adaptable between different suspects and interview goals. This speaks for the need for adaptability within the interview contexts, and lack of adaptability was a reason for investigators' dissatisfaction with their current station's rooms. Investigators may only be provided cold and authoritarian spaces without an influence over the room's design. Future research could further examine the characteristics of interviewing settings that investigators would design if they had the influence to do so.

This survey was subject to limitations. First, it was limited in terms of its scope and length. While this was intended to maintain the brevity of the survey, some respondents may have needed further explanation of probes, or additional data could have been collected using other methods such as interviews. Second, we relied on a snowball recruitment method starting with police contacts who had previous experience with other researchers. Therefore, our sample largely comprised investigators who were, to some degree, familiar with the interviewing literature. This could clarify why the

responses aligned with an information-gathering (as opposed to accusatorial) style to interviewing. Still the finding that 51.9% reported making interview room "appear cold and authoritarian" as useful testifies to the generalizability of our data. Further, we relied on investigator's self-reports. Studies that use alternative approaches, such as shadowing investigators as they prepare for interviews or observing recorded interviews, are needed to more accurately assess the use of contextual manipulation techniques in practice.

In sum, we found that majority of the investigators in this survey believed the interview setting to be of importance, with most investigators already employing some context manipulation techniques in their practice (i.e., considering seating arrangements, their clothing). This highlights the need for future research to consciously and systematically examine how investigators can use context manipulation techniques to maximize their practice. Moreover, this survey provides evidence that investigators are receptive to using context manipulation techniques in their practice, despite how little they are taught during trainings. Communicating evidence-based findings on context manipulations techniques that, to some degree, investigators already employ, or on an aspect that they already consider to have importance, increases the feasibility of investigators incorporating them into their practice.

CHAPTER 6

GENERAL DISCUSSION

General Discussion

Investigative interviews are complex and dynamic interactions (Kelly, Miller, & Redlich, 2016) where the foremost goal is to elicit a complete and accurate information disclosure from interviewees (Shepherd & Griffiths, 2013; Vrij, Hope, & Fisher, 2014). To achieve this goal, investigators must create an atmosphere that encourages disclosure, for example, through building a constructive dynamic with the interviewee (i.e., rapport). One aspect of the interviewing dynamic that has been largely unexplored thus far is the environment in which the interviews occur (Goodman-Delahunty et al., 2014). To address this gap in the psycholegal literature, the research program conducted in this thesis explored an array of topics related to investigative interviewing environments.

We experimentally examined potential environmental influences on two key elements of investigative interviews (i.e., rapport-building and information disclosure), and we explored overall thoughts and perceptions about police interview environments from general population individuals, current detainees, and police investigators. More specifically, we first examined whether interviewees' disclosure and perceptions of rapport could be facilitated through the interview room's spaciousness (**Chapter 2**) or the interview location (**Chapter 3**). Moreover, we gathered thoughts on expectations and preferences of police interview rooms from current detainees as well as individuals from the general population (**Chapter 4**). Lastly, through an international survey, we gathered police interviewers' thoughts and knowledge about context-related interviewing tactics (**Chapter 5**). In this discussion, we present an overview of the key findings within this thesis, followed by implications for research and police practice, as

well as an overview of the limitations of this thesis and suggestions for future research on interviewing environments.

Summary of Findings

We first began our research program by expanding from previous findings related to the interview environment in investigative interviews. Namely, we sought to conceptually replicate previous findings from both psycholegal research and related fields on physical spaciousness, and its potential for fostering more information disclosure (i.e., Dawson et al., 2017; Okken et al., 2013). We examined if two aspects related to room spaciousness (i.e., room size, interpersonal distance) facilitated disclosure in a suspect investigative interviewing scenario. We also expanded our study to examine whether physical spaciousness also had an influence on participants' perceptions of rapport-building. In Experiment 1 (**Chapter 2**), participants took part in a mock, virtual-reality crime and were subsequently interviewed in either a larger or smaller room about their involvement, at a closer or further interpersonal distance. Unlike previous related research, we did not find our spaciousness manipulations to facilitate either the quantity or quality of information provided by participants. However, we did find that participants interviewed in the larger room (but not at a further distance) reported its spaciousness as more comfortable, which in turn mediated higher positive perceptions of rapport. Therefore, this study yielded initial evidence that perceptions of spaciousness can aid rapport-building efforts.

Next, we sought to explore the potential influence of the environment in a wider scope, and in Experiment 2 (**Chapter 3**) we tested two different interview locations: home residences or a formal setting akin to a police interview room. To examine this,

participants were treated as witnesses, rather than suspects, since conducting interviews at witnesses' homes is more common in police practice (Clarke & Milne, 2001). Participants took part in the same virtual-reality mock crime as in Experiment 1 and were interviewed about what they had witnessed one week later at either their homes or in the formal interview room. Given the associations of home and comfort, we expected participants interviewed at home to report more positive rapport and to disclose more information than those interviewed in the formal interview room. However, interviews conducted at home yielded similar rapport-ratings, as well as quantity and quality of information as those conducted in the formal room. These findings provide some evidence that investigators can interview witnesses in the convenience of their homes without risk of hindering rapport or losing critical disclosure of information.

Following our two experimental studies, we wanted to better understand people's thoughts and understanding were regarding police interview rooms, from a wider array of populations. First, in **Chapter 4,** we gathered descriptive responses on expectations and preferences regarding suspect interview rooms from current detainees and individuals from the general population through a questionnaire. Participants also provided ratings regarding two interview rooms, one which resembled a "typical" room (i.e., no decoration, fluorescent lighting and uncomfortable chairs) and one designed to be more inviting and comfortable (i.e., including office-like decoration, warm lighting, and comfortable chairs). While some literature has suggested that a room made to be comfortable is optimal for interviewing suspects (e.g., Goodman-Delahunty et al., 2014), others have found that decorations increase suspicion instead (Dawson et al., 2017). Suspicion may arise when the interview room does not confirm the suspect's

expectations of an interview room, resulting in a negative expectancy violation. However, while we found the majority of participants from the detainee and general population groups expected a police interview setting to resemble the "typical" room, the decorated room evoked less suspicion. Participants also reported preferring a decorated, warm, and comfortable room to create a disclosing environment. Therefore, since being presented with a decorated room, as opposed to a "typical" one, did not negatively violate participants' expectations of a suspect interview room, future studies should examine how a nicely decorated, and thus inviting, environment may be useful in facilitating the suspect-investigator relationship and eliciting disclosure without risk of provoking suspicion

Lastly, in **Chapter 5**, to gather a more complete picture of the degree to which police investigators employ, and believe environmental techniques to be effective, we conducted an international questionnaire with investigators from Sweden, The Netherlands, U.SA, Canada, and England. The majority of participants reported the interview environment to be of importance, with the most of the investigators reporting to already employ some environmental techniques in their practice. Considering the seating arrangements, investigators' clothing, and having items handy to provide suspects with (i.e., water, coffee, and tissues) were three environmental aspects most considered at the planning stage of the interviews. The most reported reasons for these considerations were to facilitate the suspect-investigator interaction, as well as to increase the suspect's comfort. We also gathered investigators' beliefs about the context manipulation techniques outlined in the taxonomy by Kelly et al., (2013). We found that considering seating distances (i.e., arrangements) and clothing were the two most

reported as useful, taught during trainings, and part of their practice. However, conducting the interviews in small rooms, and considering the effects of sounds and colors were reported as least useful.

Does the Physical Environment Influence Investigative Interview Outcomes?

Throughout this thesis, we sought to answer several questions – Can the physical environment be useful for fostering a more positive investigator-interviewee dynamic, can it influence interviewee's disclosure, and what are police investigator's current beliefs and experiences with environmental/contextual techniques? The current studies provide initial evidence that contextual factors are associated with rapport-building (i.e., spaciousness), that police investigators use some of these techniques and believe them to be useful, and that detainees perceive that more comfortable interview rooms elicit more cooperation. However, we did not find support for the effect of our experimental manipulations of room size and interview location (**Chapter 2 and 3**) on information disclosure. We must note, however, that we only investigated a couple of environmental manipulations, and there is a plethora of avenues for future research to continue advancing our knowledge of interview environments (more on the Suggestions for Future Research section below).

We focused on whether the environment can be used as a non-coercive tactic. We know from the previously outlined research in the Introduction (**Chapter 1**) that there are two overarching approaches to interviewing: the accusatorial and information-gathering. The former has raised substantial controversy due to its guilt-presumption and, consequently, use of coercive methods elicit confessions. In this scenario, the use of the environment to add to the coerciveness of the interview is clearer. Indeed,

Goodman-Delahunty and colleagues (2014) described what elements of an investigative interview are characterized as coercive and non-coercive, including social elements (i.e., rapport vs. intimidation), cognitive elements (i.e., transparent process vs. deceiving about evidence), and physical elements (i.e., soft furnishing vs. restraints). Regarding the physical elements, the distinction between coercive and non-coercive aspects is quite dramatic – the detainee could be placed in isolation, under physical restraints, or under extreme temperatures, whereas in non-coercive physical manipulations they are placed in a room with soft furniture, allowed breaks and given refreshments (Goodman-Delahunty & Sivasubramaniam, 2013a). It follows that detainees would report preferring the non-coercive aspects, and respond more productively to investigators' efforts in such conditions compared to the coercive ones (we know that coercion increases resistance, rather than cooperation; Vrij et al., 2017).

Similarly, in their police survey, Kelly and colleagues (2015) found that police investigators' use of techniques under the context manipulation domain was strongly correlated with their use of confrontation/competition, presentation of evidence, and emotion provocation – all domains including coercive techniques. Kelly and colleagues (2019) posited that this reported use of context as a coercive technique could have stemmed from the investigators' Reid training, where the environment is seen as a tool to exert control over suspects. While the use of the physical environment for coercive purposes is more clear, it is its non-coercive use that has generated recent interest (Goodman-Delahunty et al., 2014; Kelly et al., 2019), and where the studies conducted in this thesis fit. Finding productive non-coercive contextual configurations was the aim of the initial studies in the current thesis.

Regarding our null findings on disclosure, it is possible that our experimental manipulations were not salient enough and therefore did not elicit differential disclosure. In **Chapter 3**, while we hypothesized that interviews conducted at home would be more beneficial compared to those conducted in a formal interview room, the formal interview room could also be interpreted by participants as comfortable with soft furnishing, colors, and a larger size. In **Chapter 4**, we hoped to provide a larger contrast between conditions, and gathered both detainees and the general population's thoughts regarding two distinct interview rooms – one decorated to be comfortable and inviting, and one resembling a "typical" room, in line with what Inbau and colleagues (2013) advocate (Kelly et al., 2019). Indeed, we did find that overall, participants preferred the decorated room, rating it as eliciting higher feelings on all positive ratings (i.e., Comfort, Cooperation) and lower on the negative ones (i.e., Constraint, Suspicion). Results from this survey indicate that interviewees are receptive to different environments, parallel to Kelly and colleagues' (2019) findings, however, we only gathered self-reports via a survey. Testing whether participants would provide more information if interviewed in a room akin to the 'decorated room' images in our study still needs to be examined.

While we can ascertain from the studies contained in this thesis that (1) interviewees are perceptive of the environment that they are placed in; (2) that their perception of spaciousness is associated with rapport; (3) that police investigators find these manipulations to have importance and use; (4) and that detainees perceive comfortable rooms as more conducive to a productive interview, we still need to examine higher stakes paradigms and salient manipulations to provide greater evidence that non-coercive contextual manipulations can lead to a more productive interview."

Practical Implications

It is imperative to first express caution toward providing generalizations and practical recommendations based on studies that have yet to be replicated or expansively studied. The fact that we did not replicate previous findings on spaciousness and disclosure from Dawson et al., (2017) in Experiment 1 (**Chapter 2**) is an example of the need for caution, which applies to all findings from this thesis. The research program conducted in this thesis aimed to examine a largely unexplored aspect of investigative interviewing practice, and so our purpose was not to readily derive practical recommendations for police investigators. Rather, our purpose was to call attention for the need for careful, systematic, and conscious consideration of interview environments from researchers and practitioners alike. That being said, this thesis provides some noteworthy considerations that, with the support of future research, can provide relevant and practical recommendations to law enforcement agencies – particularly for (re)designing interview rooms.

Experiment 1 (**Chapter 2**) provided some evidence that the physical spaciousness of the interview room can aid rapport-building efforts. Participants actively interpreted the larger room's spaciousness as more comfortable, which in turn fostered more positive perceptions of rapport. Thus, (re)designing interview rooms to be spacious may be advantageous. Investigators from our survey study (**Chapter 5**) also expressed room size as an important aspect to consider when designing interview rooms. Considering the room's spaciousness makes sense given the established detrimental effects that a lack of personal space can have on interpersonal interactions (e.g., Altman, 1975; Saegert, 1973). Individuals tend to react to being approached "too" closely by

distancing themselves (Saegert, 1973). While personal space preferences also depend on the particular situation as well as individual and cultural differences, interview rooms that allow interviewees to maintain their desired level of personal space could be helpful in fostering more positive rapport. A larger interview room allows investigators to get closer to the interviewee if needed, but if the interviewee needs space, a small room does not allow for options.

The majority of the investigators in the police survey (**Chapter 5**) indicated being unsatisfied with their current interview rooms for two main reasons. One reason being the lack of adaptability within the room set up (i.e., furniture available as well as its arrangement, moving auxiliary equipment around). The need for adaptability is not surprising given the dynamic nature of investigative interviews. Investigators acknowledge that their interviewing strategies often depend on the suspect and situation at hand. Therefore, when (re)designing interview rooms, special attention could be given to the functionality of the room and how different aspects within it (i.e., furniture, auxiliary equipment, lighting, and temperature) can be designed to provide investigators with more control.

A second reason for investigators' dissatisfaction with their current interview rooms was the rooms' sterility. Notably, investigators reported that creating a comfortable, informal, or relaxing setting was most important when designing interview rooms. This notion was corroborated by detainees and individuals from the general population (**Chapter 4**), who reported preferring a decorated, comfortable and warm room – as opposed to a "typical", simple, and undecorated room – for creating a disclosing environment. For example, some participants mentioned decoration, colors,

comfortable chairs, and windows as aspects that can help create a disclosing environment. It thus may be beneficial for practitioners to pay closer attention to physical aspects that could increase interviewees' perceptions of comfort and ease of disclosure, aspects that are feasible to implement and largely under the control of practitioners (Goodman-Delahunty et al., 2014).

Furthermore, from our police survey responses, 67% of investigators indicated conducting suspects interviews outside the police station as a useful interviewing technique, partially due to convenience. Experiment 2 (**Chapter 3**) provided some evidence in favor of the convenience factor. Based on our findings, if conducting interviews outside of the police station is deemed as convenient by investigators, there may be little risk of hindering the rapport-building process as well as the disclosure of relevant information. However, as aforementioned, these, and all findings from this thesis need to be replicated before any appropriate practical recommendations can be provided.

Suggestions for Future Research

Several suggestions for future research can be made to advance the literature on investigative interviewing environments. In the two experimental studies (**Chapter 2 and 3**), we examined whether manipulations of the physical environment can influence rapport and interviewee's disclosure. We expected the environmental manipulations to independently influence the interviewee's affective experience (i.e., comfort), and thus the outcome. As such, our conceptualization presumes that certain aspects of the environment can be isolated and manipulated in order to produce an effect on interview outcomes. However, it is also likely that environmental factors function closely in

tandem with other interview variables (e.g., both the investigators' and interviewee's individual traits, investigators' strategies, the interview protocol used) because of the complexity and dynamic nature of investigative interviews. It may be fruitful in the future to explore potential moderation effects that occur between environmental factors and other variables associated with investigative interviews to gain a fine-grained and integrated understanding of the role of the environment. An example related to our **Chapter 3** discussion could be how certain environmental manipulations may be more salient among individuals high on traits such as social anxiety.

Kelly and colleagues' (2013) taxonomy model illustrate the highly dynamic interaction between the environment or contextual factors, and an investigative interview – the context manipulation domain can be both influenced by or exert its own influence on the other domains (e.g., rapport-building, evidence presentation). However, the direction and strength of these influences are constantly changing as the dynamic of the interview changes. For example, when the suspect is initially placed in the interview room, their focus on the context may be greater as they assess this new (likely intimidating) environment. As the interview begins, their focus shifts to the investigator, where (ideally) rapport develops, the aim of the interview is settled, and the investigator-suspect dynamic develops. The suspects' initial assessment of the interview room may affect certain cognitive and emotional states (e.g., distrust, physical discomfort) that frame how they interpret other aspects of the interview– and this is why we consider the environment to be important. However, the influence of the environment is not isolated; it intertwines with the suspects' preconceptions, their perceptions of the investigator, the interpersonal dynamic and rapport that is developed,

and the actual interview inquiries. A promising future avenue for research involves how the cognitive and emotional effects of contextual variables mediate the outcomes of the interview (e.g., disclosure).

It is also arguable then that the effects of the environment would be more prominent if the manipulations were more salient – for example, if the room's spaciousness was to be so vital to participants' comfort, that it remained predominant while engaging in the interview. However, as in most social psychological research (Funder & Ozer, 2019; Richard, Bond, & Stokes-Zoota, 2003), based on the (limited) research so far it appears that environmental effects sizes lean toward small. In our first experimental study (**Chapter 2**) participants were perceptive of the room's size, however, the difference between conditions on their perceived comfort yielded a small effect size (partial $\eta 2 = .046$) Even in Dawson and colleagues' (2017) studies, while participants were found to provide more information when interviewed in the larger room as opposed to the small room, the difference was also small ($d = .33$). The lack of differences between location conditions in **Chapter 3** could also be attributed to the likelihood that the manipulations, if effective, would have yielded a small effect size, and we were powered to only detect a larger one.

One can wonder that if environmental influences are estimated to be small, whether such effects would have any real-life application. Anderson, Kelley, and Maxwell (2017) suggested that researchers should consider a large effect size when examining practical questions because only very salient findings will be compelling to practitioners as worthy of wide implementation. If aspects like room spaciousness and the interview location would only yield experimentally small effects, is this highly

practical field of research worth pursuing then? We argue that small effect sizes in critical scenarios such as criminal investigative interviews are still informative and useful, particularly if they correspond to manipulations that are highly feasible and accepted as per our findings in the police survey study (**Chapter 5)**. The willingness of investigators to employ context manipulation techniques is encouraging for forthcoming research studies that have power to find small effect sizes.

Moreover, Funder and Ozer (2019) emphasized in their thoughtful evaluation of effect sizes in psychological research that small effects are important for their cumulative power. In this regard, both an example and a direction for future research, is the potential effects of the environment on investigators. While all the research thus far has focused on the interviewees, how the interview environments influence investigators has important implications, even if we expect the environmental effects to be small. Considering how often investigators are inside these rooms, an environment that is dull, intimidating and uncomfortable (both mentally and physically) can have consequences for their interviewing practice in the long-term. For instance, referencing back to the lighting example from Hartley (2002; **Chapter 1**) conducting the first interview of the day in a room with harsh, fluorescent lighting may not readily affect the investigator. However, by the fifth interview under this lighting, the investigator may experience eyestrain and fatigue, which in turn could lead to irritability and, as such, a problematic communication style.

An interesting avenue for future research on environmental manipulations relates to the long-term effects on investigators and interviewees resulting from certain environments. All of the current experimental studies (**Chapters 2 and 3**) involved a

relatively small dose of exposure to particular environmental manipulations, compared to what a suspect could be exposed to in an actual criminal investigation (e.g., sitting all day in a very small and sterile room). Thus, there may be a dose-response association whereby the effects of environmental manipulations are larger in size, contingent on higher levels of exposure.

Related to rapport, there are also noteworthy consideration for future research. Acknowledging the lack of current consensus as to what specific characteristics interviewees perceive as rapport (Abbe & Brandon, 2013), future studies should examine more closely how rapport interacts with the interview environment (Kelly et al., 2013). Providing a closer examination of how aspects of the physical environment (e.g., spaciousness, physical comfort) as well as other positive affective experiences (e.g., feeling at ease, feeling in control) relate to interviewees' perceptions of rapport, can help establish their diagnostic value for its measurement.

Moreover, this thesis only experimentally examined a few aspects of the physical environment (i.e., room size, interpersonal distance, and interview location). There is a plethora of aspects relevant to investigative interviewing practice that future research should explore. For example, based on responses from detainees and the general population (**Chapter 4**), simple changes to the interview room decorations (e.g., a lamp with warm lighting, using cushioned chairs) may create a more comfortable, disclosing environment. Future research should establish the degree to which physical comfort is predictive of cooperation and information disclosure. Similarly, according to our police survey data (**Chapter 5**), investigators consider their clothing prior to interviews, yet

there is no empirical evidence for the benefits of wearing uniforms or informal clothes when interviewing suspects or witnesses (e.g., reducing interviewee´s anxiety).

Future research on interview environments would benefit from conducting field studies, in actual interview environments, to more appropriately gauge how real interviewees interpret the physical environment, and whether it can be used to facilitate information disclosure. Field validation is necessary to provide a better understanding of the mechanisms by which the physical environment influences the interview outcome, especially when the ultimate goal is to provide practical recommendations on room (re)design and interviewing techniques.

For example, some police stations have designated "soft" interview rooms, commonly used for interviewing witnesses and victims (for a few examples, see Bologna, 2019; Connelly, 2019; Girgis, 2019; Oligschlaeger, 2015). These rooms aim to reduce the anxiety inherent from partaking in police interviews. While it is expected to interview suspects in more authoritarian, sterile rooms (**Chapter 4**; Feld, 2014) findings from our police survey (**Chapter 5**) showed that many investigators wished their current rooms were less sterile and emphasized the need for creating a more comfortable and relaxing setting. The Anders Breivik case, a man convicted of killing 77 Norwegians in 2011, serves as an anecdotal example of investigators recognizing the potential of conducting suspect interviews in "soft" rooms. Breivik was repeatedly interviewed in what was described as a "cozy" room, including soft furniture, wall decorations and pleasant temperature. Norwegian police psychologist Asbjørn Rachlew stated that the room was used to optimize every chance of Breivik talking (Heyer & Traufetter, 2011). Moving forward, field studies should examine interviews with suspects conducted in

these "soft" rooms compared to those in the typical suspect rooms. This way we can assess to what extent a more comfortable environment could aid in both rapport-building efforts and information elicitation with a more ecologically valid paradigm.

Additionally, as aforementioned, throughout this thesis we mostly focused on the interviewees' perceptions and behaviors (i.e., perceptions of rapport, information disclosure, interview room preferences). However, investigative interviews are dynamic and bi-directional, and so future studies should account for how the interview environment may also influence the investigator. In that vein, investigators' satisfaction with their stations' interview rooms should also be more closely examined. The interview rooms form part of investigators' daily work environment, and work environments can affect work satisfaction and personal wellbeing (Kamarulzaman, Saleh, Hashim, Hashim, & Abdul-Ghani, 2011; Vischer, 2008); therefore, future research should not only account for how interview environments affect investigators' interviewing practice, but should also consider how the interview environments' impact upon investigators' more broadly (e.g., general wellbeing).

Methodological Considerations

There are methodological considerations throughout this thesis that need addressing. First, one of our main outcomes of interest in our two experimental studies (**Chapter 2 and 3**) was rapport-building. The importance of building rapport with interviewees has been reiterated by both academics (Clarke & Milne, 2001; Fisher & Geiselman, 1992) and practitioners (Kassin et al., 2007), yet there are notable shortcomings in rapport research. One shortcoming is, as aforementioned, the lack of a clear operational definition specific to investigative interviewing contexts (Abbe &

Brandon, 2013). For the purposes of this thesis, and in line with previous definitions provided (e.g., Abbe & Brandon, 2013; Walsh & Bull, 2012), we defined rapport as a positive and constructive relationship between investigator and interviewee. However, the lack of an operational definition is acknowledged in most rapport literature, and so we are confident that a stronger consensus will soon emerge.

Second, at the moment there is no general consensus on how to most appropriately measure rapport (Duke et al., 2018). In our studies, we relied on participants' self-reports through the interaction questionnaire proposed by Vallano and Scheiber-Compo (2015). The interaction questionnaire has been used in previous rapport-related studies (e.g., Ewens, Vrij, Mann, Leal, Jo & Houston, 2017; Kieckhaefer, Vallano, & Schreiber Compo, 2014), however, the suitability of this questionnaire for measuring rapport, as well as its reliability and validity, remains to be established (see Duke et al., 2018).

Another rapport-related limitation from this thesis is that in both our experimental studies (**Chapter 2 and 3**) rapport-building was implemented at the beginning of each interview, rather than throughout. In both experiments, the investigator began with a rapport-building phase, where the interviewee was asked about their day, their studies, and future plans before moving onto the crime-related questioning phase. While our studies were standardized to maintain experimental control, rapport-building is a fluid process that should be maintained and nurtured throughout the entire interview for optimal effects (Abbe & Brandon, 2013; Collins & Carthy, 2018; Wash & Bull, 2012).

Moreover, the generalizability of the experimental findings of this thesis is limited. In **Chapters 2 and 3**, both experiments were conducted with student populations, within university grounds (except for the home interviews in **Chapter 3**). The lack of ecological validity is a common limitation of laboratory research; however, it is particularly problematic in investigative interviewing research. Simulating police investigations, especially with suspects, carries ethical concerns that limits the options for recreating the high-stakes of real police interviews (Hartwig, Granhag, & Vrij, 2005). As stated in **Chapter 2**, the virtual reality mock crime paradigm we employed, as well as the subsequent structured interviews, may have failed to elicit feelings of discomfort associated with a real-life police interview.

We also acknowledge the limitations that come from research that yields small effect sizes, which require methodological considerations that were limited in our studies. For example, the strength of the manipulations we employed and our experimental setting may not have been enough – as we expressed in our **Chapter 2**'s limitations, the interpersonal distances we manipulated may not have differed enough to influence participants' comfort levels. Further, considerably larger sample sizes are needed in order to observe small effects – this is particularly important when considering our lack of significant differences in Study 2 (**Chapter 3**).

Conclusion

Considering the lack of previous research on interviewing environments, across four studies, this thesis employed different methodologies (i.e., lab-based experiments, survey questionnaires) and assessed various populations (i.e., university students, M-turkers, police investigators, detainees) to comprise a wide examination of potential

environmental influences in investigative interviews. We hope that this body of work serves as a foundation for future research in this limited, yet very practical aspect of interviewing practice. Investigative interviews are complex interpersonal interactions, and investigators can benefit from evidence-based recommendations to help maximize the interview process and its outcome, which includes utilizing the interview environment to investigators' advantage.

We found initial evidence that physical spaciousness could facilitate rapport-building, although unlike previous studies (Dawson et al., 2017), spaciousness did not foster higher information disclosure. Moreover, we found that witnesses interviewed at their home provided similar amounts of information, and perceived rapport as equally positive as those interviewed in a formal room akin to a police interview suite. We also found that detainees and general population individuals alike expect a suspect interview room to be bare, sterile, and undecorated, yet, they prefer a decorated, warm, and comfortable room in order to create a disclosing environment. Lastly, a police survey provided evidence that police investigators believe the interview environment to be of importance and reported that they already employ some context manipulation techniques, such as considering the impact of their clothing on suspects, and the seating arrangements in their interviewing practice.

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APPENDICES

APPENDIX A

EXPERIMENT 1 ETHICS APPROVAL

Maastricht University Leading in Learning!

Board of FPN
Universiteit Maastricht
Postbus 616
6200 MD Maastricht

***E**thical **R**eview **C**ommittee*
***P**sychology and **N**euroscience*

Our reference	*direct dial*	*Maastricht*
ERCPN-173_07_11_2016_A3	0031.43.388.4008	14-09-2017

Dear Board,

After examination of the amendment of the research line entitled "Increasing the disclosure of information in a forensic interview", submitted by Katherine Hoogesteyn, the Ethical Review Committee Psychology and Neuroscience (ERCPN) came to the conclusion that there are no objections to the execution of the amendment as described in the said protocol with regard to the review framework used.
The applicant has been informed that:

1. Approval has been granted for a period of five years, with the possibility to prolong.
2. If the approval has been granted for a research line, each individual study within this line must be notified to the ERCPN using the form provided on the website. This does not include studies which are reviewed by a proposal committee (i.a. fMRI, EEG and TMS).
3. Changes to the approved research protocol must be submitted by the ERCPN.
4. The reference number should be mentioned in all correspondence with the ERCPN.
5. The reference number must be indicated on all advertising communications to recruit participants.

Yours sincerely,

Prof. Dr. G. Kok	Mr. M. Schrijnemaekers	Prof. Dr. A.T. Sack
Chair ERCPN	Secretary ERCPN	Board of FPN

Cc. Katherine Hoogesteyn

Visiting address
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Email address
ercpn-fpn@maastrichtuniversity.nl

ERCPN
Chair: G. Kok
Executive secretary:
M. Schrijnemaekers

APPENDIX B

EXPERIMENT 2 ETHICS APPROVAL

Maastricht University

Faculty of Psychology and Neuroscience

Board of FPN
Universiteit Maastricht
Postbus 616
6200 MD Maastricht

***E**thical **R**eview **C**ommittee*
***P**sychology and **N**euroscience*

Our reference	*direct dial*	*Maastricht*
ERCPN-183_03_09_2017_A1	0031.43.388.4008	16-11-2017

Dear Board,

After examination of the amendment of the research protocol entitled "Environmental influences in witness interviews", submitted by Katherine Hoogesteyn, the Ethical Review Committee Psychology and Neuroscience (ERCPN) came to the conclusion that there are no objections to the execution of the research project as described in the said protocol with regard to the review framework used. The applicant has been informed that:

1. Approval has been granted for a period of five years, with the possibility to prolong.
2. If the approval has been granted for a research line, each individual study within this line must be notified to the ERCPN using the form provided on the website. This does not include studies which are reviewed by a proposal committee (i.a. fMRI, EEG and TMS).
3. Changes to the approved research protocol must be submitted by the ERCPN.
4. The reference number should be mentioned in all correspondence with the ERCPN.
5. The reference number must be indicated on all advertising communications to recruit participants.

Yours sincerely,

Prof. Dr. G. Kok	Mr. M. Schrijnemaekers	Prof. Dr. A.T. Sack
Chair ERCPN	Secretary ERCPN	Board of FPN

Cc. Katherine Hoogesteyn
Cc. Data management

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ERCPN
Chair: G. Kok
Executive secretary:
M. Schrijnemaekers

APPENDIX C

STUDY 3 ETHICS APPROVAL

Maastricht University

Faculty of Psychology and Neuroscience

Board of FPN
Universiteit Maastricht
Postbus 616
6200 MD Maastricht
***E**thical **R**eview **C**ommittee* Psychology and Neuroscience

Our reference	direct dial	Maastricht
193_09_05_2018	0031.43.388.4008	14-5-2018

Dear Board,

After examination of the research protocol entitled "Expectancy violation effects and police interview environment", submitted by Katherine Hoogesteyn , the Ethical Review Committee Psychology and Neuroscience (ERCPN) came to the conclusion that there are no objections to the execution of the research project as described in the said protocol with regard to the review framework used.

The applicant has been informed that:

1. Approval has been granted for a period of five years, with the possibility to prolong.
2. If the approval has been granted for a research line, each individual study within this line must be notified to the ERCPN using the form provided on the website. This does not include studies which are reviewed by a proposal committee (i.a. fMRI, EEG and TMS).
3. Changes to the approved research protocol must be submitted by the ERCPN.
4. The reference number should be mentioned in all correspondence with the ERCPN.
5. The reference number must be indicated on all advertising communications to recruit participants.

Yours sincerely,

Prof. Dr. G. Kok	Mr. M. Schrijnemaekers	Prof. Dr. A.T. Sack
Chair ERCPN	Secretary ERCPN	Board of FPN

Cc. Katherine Hoogesteyn
Cc. Datamanagement

Visiting address
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ERCPN
Chair: G. Kok
Executive secretary:
M. Schrijnemaekers

APPENDIX D

DETAINEE QUESTIONNAIRE (STUDY 3)

Hello, my name is Katherine Hoogesteyn, and I am a PhD student at Maastricht University and University of Portsmouth. I am conducting a study to better understand how people feel about police interview rooms, and I invite you to complete the short questionnaire that was provided to you. I am interested in your perceptions and expectations regarding interview rooms. This questionnaire should take approximately 7 minutes to complete, and your complete and honest responses would be very informative regarding police practice and the investigative interview process. Please keep in mind that the questionnaire is designed to preserve your anonymity. In other words, your individual responses will not be shared with the police, or anyone other than me, the experimenter. At the end of the study, your responses will be combined with others who also participated and will be reported as averages in our publication.

Thank you very much for your attention; your thoughts regarding interview rooms are valuable and I am deeply appreciative for the information you provide.

Demographics:

Age: _____

Gender: _____

Have you been officially interviewed by the police before?

If so: Day ___ Month ___ Year ___

For what purposes were you last interviewed by police? _____

In what location were you last interviewed by police? _____

Have you been admitted to prison before?

If so: Day ___ Month ___ Year ___

For what offenses were you last admitted to prison? _____

The following questions will ask about your opinions about police interview rooms. Please read the questions carefully, and answer thoroughly and honestly.

1. Can you please describe in your own words what you **expect** a suspect interview location to look like?

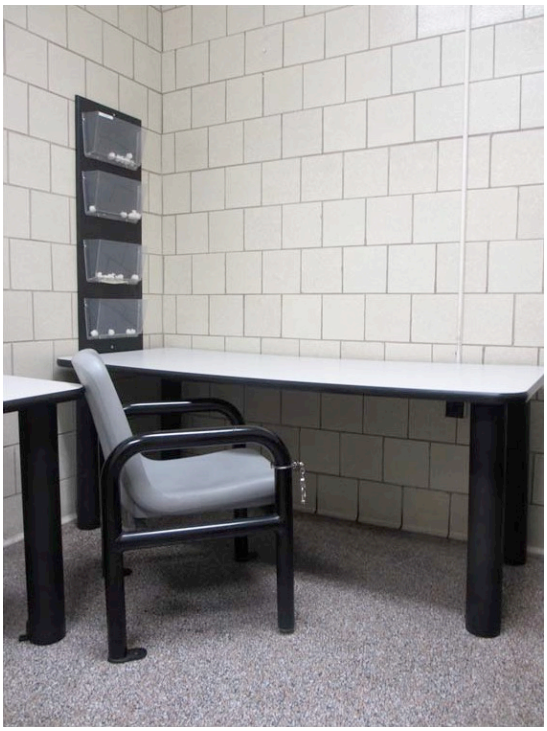
_____
_____
_____
_____

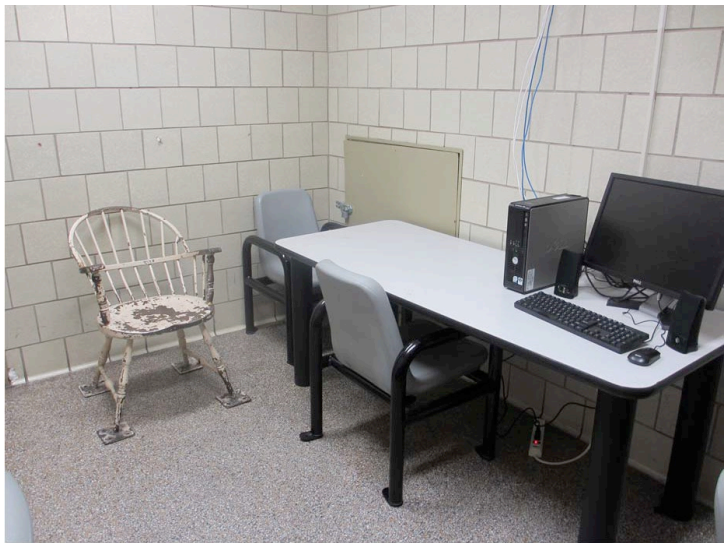
2. Can you please describe in your own words how you think a suspect interview location **should look like** in order to encourage you to be talkative?

_____
_____
_____
_____

Take a careful look at the following photos of Room A[6]

ROOM A:





3. If you were interviewed in ROOM A. How would you feel? Please answer all that apply:

a. Comfortable

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

b. Suspicious

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

c. Constrained

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

d. Able to speak freely

[6] Presentation of Room A and Room B were counter-balanced

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

e. Cooperative

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

f. Ready to get out

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

g. Wary

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

Take a careful look at the following photos of Room B

ROOM B:

4. If you were interviewed in ROOM B. How would you feel? Please answer all that apply

a. Comfortable

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

b. Suspicious

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

c. Constrained

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

d. Able to speak freely

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

e. Cooperative

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

f. Ready to get out

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

g. Wary

1 Not at all	2	3	4 Somewhat	5	6	7 Extremely

5. In which room would you **expect** to be interviewed in as a suspect to a crime? Please circle one.

Room A

Room B

Please explain why:

_____
_____
_____
_____

6. In which room would you **prefer** to be interviewed in as a suspect to a crime? Please circle one.

   Room A

   Room B

   Please explain why:

   _____
   _____
   _____
   _____

Thank you for taking the time to complete this questionnaire. Your responses will be kept confidential, and no report resulting from this data will linked to you.

APPENDIX E

STUDY 4 ETHICS APPROVAL

Maastricht University

Faculty of Psychology and Neuroscience

Board of FPN
Universiteit Maastricht
Postbus 616
6200 MD Maastricht

***E**thical **R**eview **C**ommittee*
***P**sychology and **N**euroscience*

Our reference	*direct dial*	*Maastricht*
ERCPN-185_05_11_2017	0031.43.388.4008	28-11-2017

Dear Board,

After examination of the research protocol entitled "Law Enforcement Questionnaire: Context Manipulation and Crosswise Model", submitted by Katherine Hoogesteyn, the Ethical Review Committee Psychology and Neuroscience (ERCPN) came to the conclusion that there are no objections to the execution of the research project as described in the said protocol with regard to the review framework used.
The applicant has been informed that:

1. Approval has been granted for a period of five years, with the possibility to prolong.
2. If the approval has been granted for a research line, each individual study within this line must be notified to the ERCPN using the form provided on the website. This does not include studies which are reviewed by a proposal committee (i.a. fMRI, EEG and TMS).
3. Changes to the approved research protocol must be submitted by the ERCPN.
4. The reference number should be mentioned in all correspondence with the ERCPN.
5. The reference number must be indicated on all advertising communications to recruit participants.

Yours sincerely,

Prof. Dr. G. Kok	Mr. M. Schrijnemaekers	Prof. Dr. A.T. Sack
Chair ERCPN	Secretary ERCPN	Board of FPN

Cc. Katherine Hoogesteyn
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APPENDIX F

POLICE SURVEY

Information regarding the study:

We would like to invite you to complete an online questionnaire regarding your perceptions, knowledge, and current use of techniques specific to the environment/setting in which investigative interviews take place. Your responses to this questionnaire will contribute to helping scholars understand to what goal and extent environmental manipulation techniques are used in the field, and how effective they are when employed during suspect interviews.

The questionnaire includes 13 questions, and will take approximately 20 minutes to complete. This questionnaire has been reviewed and approved by the Ethics Committee at Maastricht University. The questionnaire will be completed confidentially, and you are not required to provide your name or personal/identifying information. You will be asked for some basic demographic information that will not uniquely identify you.

We have taken all reasonable steps to ensure confidentiality in line with the Maastricht University procedures. You are free to withdraw at any stage if you do not wish to submit your responses. By completing this questionnaire, you consent to participate in this study and that your data be shared in future studies.

If you have any questions or would like to learn more about the results of the research, please contact me, Katherine Hoogesteyn (PhD candidate at Maastricht University) at k.hoogesteyn@maastrichtuniversity.nl, or my supervisors Ewout Meijer (Assistant professor of Forensic Psychology at Maastricht University) at eh.meijer@maastrichtuniversity.nl and Prof. Aldert Vrij (Professor of Applied Social Psychology at the University of Portsmouth) at aldert.vrij@port.ac.uk.

We would like to thank you in advance for your valuable participation.

☐ I have been informed of the study. I have read the written information. I have had the opportunity to ask questions about the study. I have been able to think about my participation in the study, which is completely voluntary.

☐ I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

☐ I agree to participate in the study.

Demographics

D1 Please indicate your age

_____

D2 Please indicate your gender

○ Male

○ Female

D4 Please indicate country of residence

_____

D5 Please indicate your native language

_____

D6 Please indicate your English proficiency level

- ○ Beginner
- ○ Intermediate
- ○ Advanced
- ○ Native

D7 Please indicate your current rank

_____

D8 Please indicate your total years of experience interviewing suspects

_____

D9 Have you received any special training/workshop/seminar on conducting interviews? If yes, which specific trainings?

- ○ Yes _____
- ○ No

D10 Law enforcement agency/unit in which you currently work

_____

D11 To what extend do you consider yourself up-to-date with the scientific literature on suspect interview methods?

- ○ Not at all
- ○ Somewhat up to date
- ○ Moderately up to date
- ○ Mostly up to date
- ○ Extremely up to date

Instructions

Thank you for taking the time to complete the following short questionnaire. This survey will focus on your perceptions, knowledge, and current use of techniques specific to the environment/setting in which investigative interviews take place. Please answer thoroughly and truthfully.

List of techniques

Q1. Is there anything you do on purpose, in relation to the interview environment/setting, to prepare for a suspect interview? For example, arranging the chairs in a particular way, deciding on a specific location to conduct the interview, changing out of uniform to wear something informal, etc.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Q2. For each thing you mentioned above, place a number from 1 to 7 in the box to indicate how effective you consider this to be (1 = not effective, 4 = neutral, 7= very effective).

On the 'Purpose' column, please write why you consider it effective. For example, for

making the interviewee more comfortable, or for showing interest in what they have to say, etc.

	Effectiveness 1 = not effective, 4 = neutral, 7= very effective	**Purpose** Why do you consider it effective?
1.		
2.		
3.		
4.		
5.		
6.		

Q3. In your opinion, how important do you consider the environment/setting of the interview to be during an investigative interview. Please check one:

- ○ Extremely important
- ○ Very important
- ○ Moderately important
- ○ Slightly important
- ○ Not at all important

Q4. Thinking about the aims and purposes of an interview, what do you consider to be the most important characteristics when designing an interview room?

_____

_____

_____

CM Techniques

The following questions will ask you about a specific interview domain: ***context manipulation.*** This term refers to the altering of the physical and temporal space where the interviewing occurs to maximize the probability of a successful outcome (the techniques listed below all fall under the context manipulation category).

Q5. Please select **YES** or **NO** for the following. Please respond to all questions

	Do you consider this a technique?	Is this a useful technique?	If useful, for what purposes? Explain	Was it taught during your trainings?	Is this technique available to you? Meaning, is this something you can control?	On a scale from 1-7, how often do you do this on a REGULAR basis? (1 = never, 4 = neutral, 7 = always
1. Conducting suspect interview in a small room	YES / NO	YES / NO		YES / NO	YES / NO	
2. Interviewing suspect in a formal room	YES / NO	YES / NO		YES / NO	YES / NO	
3. Leave suspect alone in room for a period of time	YES / NO	YES / NO		YES / NO	YES / NO	
4. Alter specific aspects of the physical space. For example, arrangement of furniture or removing objects from room	YES / NO	YES / NO		YES / NO	YES / NO	

5. Consider the time of day	YES / NO	YES / NO		YES / NO	YES / NO	
6. Consider your physical appearance, such as clothing	YES / NO	YES / NO		YES / NO	YES / NO	
7. Sitting at a close, intimate distance	YES / NO	YES / NO		YES / NO	YES / NO	
8. Use a setting that is culturally attractive to the suspect	YES / NO	YES / NO		YES / NO	YES / NO	
9. Consider the effects of sounds and colors	YES / NO	YES / NO		YES / NO	YES / NO	
10. Consider the sitting distance between you and the suspect	YES / NO	YES / NO		YES / NO	YES / NO	
11. Make interview room appear warm and comfortable	YES / NO	YES / NO		YES / NO	YES / NO	

12. Make interview room appear cold and authoritarian	YES / NO	YES / NO		YES / NO	YES / NO	
13. Interview suspects outside of police station	YES / NO	YES / NO		YES / NO	YES / NO	

Q6. Are you currently satisfied with the interview rooms in your station? If not, what would you change?

- ○ Yes
- ○ No _____

Debriefing Statement

Thank you for completing this questionnaire!

In this questionnaire, we were mainly interested in understanding police officers' knowledge and opinions on interview environments and the potential of context manipulation techniques.

Research examining the influence of the context - or environment - in investigative interviews has only recently started. However, we consider the advantages of environmental manipulations worthy of consideration. Your responses in this survey will help us continue this line of research.

Additionally, we were interested in examining a questioning method, the Crosswise Model, for obtaining honest responses compared to just simply asking direct questions. Some of you received the Crosswise questions, while others receive the direct questions. The questions were all the same, just the way they were asked differed.

Your responses will be kept confidential, and no report resulting from this data will be linked to you.

If you would like to know more about this study or have any concerns, please contact me: Katherine Hoogesteyn (k.hoogesteyn@maastrichtuniversity.nl) or my supervisors Ewout Meijer (eh.meijer@maastrichtuniversity.nl) and Aldert Vrij (aldert.vrij@port.ac.uk).

Again, many thanks!

Katherine Hoogesteyn
PhD Candidate
Maastricht University & University of Portsmouth

APPENDIX G

UPR16 FORM

FORM UPR16

Research Ethics Review Checklist

UNIVERSITY OF PORTSMOUTH

Please include this completed form as an appendix to your thesis (see the Research Degrees Operational Handbook for more information

Postgraduate Research Student (PGRS) Information				Student ID:	837898
PGRS Name:	Katherine Hoogesteyn				
Department:	Psychology	First Supervisor:	Aldert Vrij		
Start Date: (or progression date for Prof Doc students)	September 2016				
Study Mode and Route:	Part-time ☐ Full-time ☒	MPhil ☐ PhD ☒	MD ☐ Professional Doctorate ☐		

Title of Thesis:	What's the Room Got to do with it? Examining the Influence of Environmental Aspects in Investigative Interviews
Thesis Word Count: (excluding ancillary data)	31.433

If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

UKRIO Finished Research Checklist:
(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: http://www.ukrio.org/what-we-do/code-of-practice-for-research/)

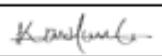
a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES ☒ NO ☐
b) Have all contributions to knowledge been acknowledged?	YES ☒ NO ☐
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES ☒ NO ☐
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES ☒ NO ☐
e) Does your research comply with all legal, ethical, and contractual requirements?	YES ☒ NO ☐

Candidate Statement:

I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)

Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):	ERCPN-173-07-11-2016 ERCPN-183-03-09-2017 ERCPN-193-09-05-2018 ERCPN' 185-05-11-2017

If you have *not* submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:

Signed *(PGRS)*:		Date: 20-9-2019

UPR16 – April 2018