

RESEARCH ARTICLE

Examining witness interviewing environments

Katherine Hoogesteyn^{1,2}  | Ewout Meijer¹ | Aldert Vrij² 

¹Forensic section Faculty of Psychology and Neuroscience Maastricht University, Maastricht, The Netherlands

²Department of Psychology, University of Portsmouth, Portsmouth, UK

Correspondence

Katherine Hoogesteyn, Maastricht University, attn. UNS40 PO Box 616, 6200MD, Maastricht, The Netherlands.
Email: k.hoogesteyn@maastrichtuniversity.nl

Funding information

American Psychology-Law Society (AP-LS), Grant/Award Number: Grants in Aid for Students Committee; Erasmus Mundus Joint Doctorate Program The House of Legal Psychology, Grant/Award Number: Framework Partnership Agreement (FPA) 2013-0036 an

Abstract

The literature on information elicitation in psycholegal settings has predominantly focused on the investigator–interviewee dynamic, with little attention to the environment in which the interview takes place. The present study compared the impact of two interview locations on the disclosure of crime-related information and perceptions of rapport building. Participants experienced a virtual reality mock crime, and 1 week later were interviewed at either their homes, or a formal room akin to a real-world police interview room. Participants in the home setting reported feeling more at ease and in control compared to participants interviewed in the formal 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 underscore the practicality of interviewing witnesses outside the police interview room if deemed as more convenient.

KEYWORDS

interview environment, interview location, investigative interviewing, rapport-building, witness interviews

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1 | 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, & Kleinman, 2010; Shepherd & Griffiths, 2013; Vrij et al., 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 & Compo, 2011). While most of the literature on maximising 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 in a home-like (as opposed to office-like style fostering more communication concerning general and intimate topics (Gifford, 1988). Gifford argued that a home-like 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 a study evaluating high-value detainees' perceptions of coercive and non-coercive strategies for eliciting cooperation, the physical setting was linked to perceptions of non-coercion (Goodman-Delahunty et al., 2014). Detainees self-reported that interviews that were conducted in a comfortable setting were associated with an increase in their disclosure of incriminating information. It was argued that the comfortable setting may have fostered rapport, which in turn facilitated disclosure. In addition, across 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. In the present study, we will expand the literature to a witness scenario.

Aside from specific aspects of the interview room, another environmental factor 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 United Kingdom, it is common to conduct interviews at witnesses' homes and workplaces (Clarke & Milne, 2001). The introduction of body-worn cameras by frontline officers also allows witness interviews to be conducted in several different environments, including homes, roadsides, and workplaces. By using cameras to audio and video record the interviews, officers can focus on maintaining the flow of the information disclosure (Westera, Kebbell, & Milne, 2011), while also obtaining more complete witness accounts with stronger evidentiary value (Westera & Powell, 2017).

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, home-like 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 to interviews conducted in a more typical, formal room resembling a police 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, emphasising its importance for

improving the quality of communication and disclosure of information between witnesses and investigators (e.g., Clarke & Milne, 2001; Fisher & Geiselman, 1992; Gudjonsson, 2003; Collins, Lincoln, & Frank, 2002; Powell, Fisher, & Wright, 2005). Rapport-building consists of showing empathy, personalising the interview (Fisher & Geiselman, 1992), as well as engaging in active listening, attentiveness, and friendliness (Collins et al., 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, Anders Granhag, & Vrij, 2005). Rapport has been shown to increase the likelihood, as well as the accuracy, of disclosure from witnesses (Alison, Alison, Noone, Elntib, & Christiansen, 2013; Kieckhaefer, Vallano, & Schreiber Compo, 2014; Vallano & Compo, 2011). In practice, police officers also acknowledge 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—varying according 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, 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 experience less state—or situational—anxiety compared to 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). Because stress and anxiety can interfere with a witness' ability to recall an event (Kieckhaefer et al., 2014; Marr, Sauerland, Otgaar, Quaedflieg, & Hope, 2018), 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 and therefore will try harder to recall the event. For that reason, it is recommended that interviews be conducted in pleasant surroundings (see Collins et al., 2002).

An example of pleasant surroundings is the “soft” police interview rooms some police stations have. Feld (2013) 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 (Bohannon, 2004). However, guidelines on what makes a child friendly environment are scarce (Newlin et al., 2015), and even then, the few sources available on interviewing environment, anxiety, and memory performance has mostly focused on child rather than adult testimonies.

The detrimental effects of anxiety on memory are 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 & Compo, 2011; Vallano & Schreiber Compo, 2015). Therefore, we were interested in testing whether interview location served as another aid for managing witness anxiety levels. Given that home-like environments are associated with more ease and comfort (e.g., Gifford, 1988), we expected witnesses interviewed at home would 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 are as follows:

Hypothesis 1 Participants interviewed at their home will provide more critical and higher quality of information than those interviewing 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.

2 | METHOD

2.1 | 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: (a) quantity of disclosure measured by the number of units of information, (b) quality of disclosure, measured by the amount of crime-related details provided and statement completeness, (c) perceptions of rapport, and (d) 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 (0.8) was approximately $N = 70$. Eighty-six student and staff members (staff were administrative and naïve to forensic psychology research) were recruited from 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 ($M = 21.70$, $SD = 6.21$), and majority were women (53 women, 21 men).

2.2 | Procedure

This study was reviewed and approved by the standing ethical committee at our university. Participants were recruited via our University's recruitment system (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, 1 week apart and were randomly assigned to one of the two interview settings (i.e., own home vs. 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.

Prior to starting the VR scenario, participants were told that in the scenario they would meet a close friend, 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 familiarise themselves with the environment before they were met by their 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 reminded they would be interviewed about what they witnessed in the following week, and were given a reminder sheet with their appointment date and the location, either at their home or the formal interview room.

On the day of the interview, participants arrived at the formal interview location, which was located at the University's Center for Forensic Interviewing, or the investigator met the participants at their homes. 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). All participants were then interviewed by the same investigator who was female, in her mid-twenties and had no prior interaction with any of the participants. The investigator was not blind to the study's purpose or conditions. All interviews were conducted according to a structured protocol and a script to reduce variability between the interviews. The investigator interviewed all participants in a information-gathering interview style, which began with a rapport-building phase by asking four scripted, general questions derived from Kieckhafer et al. (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 without self-disclosing.

The investigator then moved to the questioning phase, using a standardised 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 about 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 about what happened. 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.

2.3 | Materials

2.3.1 | Rapport questionnaire

We measured rapport via the interaction questionnaire developed by Vallano and Compo (2011). The questionnaire contains 27 rapport-related characteristics rated on a 7-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's $\alpha = .91$).

2.4 | Interview experience questionnaire

The questionnaire was adapted and extended from Okken, Van Rompay, and Pruy (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 and "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," and "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 = high amount of characteristic), and analysed as individual variables.

2.5 | State-Trait Anxiety Inventory

The State-Trait Anxiety Inventory (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 (i.e., "I am presently worrying over possible misfortunes," "I feel secure"). All items are 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).

2.6 | 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) and accuracy.

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). To examine accuracy, we mimicked the procedure of De La Fuente Vilar et al. (2020). That is, we checked participants' statements against a comprehensive checklist of all details presented in the VR scenario. This list was different from the completeness checklist in that it included many more specific details, rather than just the 12 key ones (e.g., the alley had brick walls, perpetrator wore a blazer, victim's watch was on the right hand). We coded as correct all details that were reported as presented in the scenario, and incorrect if they were in error or confabulated. We calculated an overall accuracy score for each participant by dividing the number of correctly recalled details by the total number of details (e.g., the sum of the number of correctly reported details plus the number of incorrect details).

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 appropriate agreement for total units of information provided, single measures intraclass correlation coefficient (ICC = 0.96, 95% CI [0.89, 0.99]), crime-related details provided (ICC = 0.95, 95% CI [0.85, 0.98]), statement completeness (ICC = 0.92, 95% CI [0.76, 0.97]), and statement accuracy (ICC = 0.74, 95% CI [0.38, 0.90]).

2.7 | 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 MCAR test, which was not statistically significant, $\chi^2(142) = 147.52, p = .358$, indicating no evidence of bias due to missing data, which were accommodated using an expectation maximisation 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 (i.e., no difference between conditions) compared to the alternative hypothesis, quantifying the degree to which the data favour one of the two hypotheses (Harms & Lakens, 2018; Quintana & Williams, 2018). As reported in this study, BF_{01} denotes evidence in favour of the null, and BF_{10} denotes favour 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 fit equally likely well under both hypotheses 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).

3 | RESULTS

3.1 | Disclosure

Against our expectation, participants in the home condition provided a similar amount of units of information (range: 32–109, $M = 39.69, SD = 13.44$) than those in the formal room condition ($M = 44.74, SD = 15.91$), $t(72) = 1.47, p = .15, d = 0.34, 95\% CI [-11.92, 1.81]$. The BF_{01} of 1.65 provided more—albeit weak—support for the lack of an effect on units of information. Participants in the formal room condition reported a similar number of crime-related details (range: 12–78, $M = 32.18, SD = 11.57$) to participants in the home condition ($M = 28.14, SD = 10.84$), $t(72) = 1.54, p = .13, d = 0.36, 95\% CI [-9.25, 1.18]$, $BF_{01} = 1.50$. Regarding statement completeness, participants interviewed in the interview room (range: 5–12, $M = 9.13, SD = 1.76$) also did not differ from those interviewed at home ($M = 8.74, SD = 1.48$), $t(72) = -1.01, p = .32, d = 0.24, 95\% CI [-1.14, 0.37]$, $BF_{01} = 2.68$). Lastly, statement accuracy was also not significantly different between participants in the formal room condition ($M = 0.83, SD = 0.07$) and those interviewed at home ($M = 0.82, SD = 0.08$), $t(72) = 0.54, p = .58, d = 0.12, 95\% CI [-0.02, 0.04]$, $BF_{01} = 3.65$). Therefore, we rejected our first hypothesis.

3.2 | Rapport and interview experience

We expected participants interviewed in their home setting to report experiencing more positive rapport. Our 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 ($M = 134.87, SD = 21.83$), $t(72) = 1.31, p = 0.19, d = 0.30, 95\% CI [-3.20, 15.53]$, $BF_{01} = 1.99$.

Regarding overall interview experience,¹ participants in the home interview condition reported feeling significantly more at ease ($M = 6.00, SD = 1.24$) than those in the interview room condition ($M = 5.02, SD = 1.29$), $t(72) = 3.312, p = 0.001, d = 0.77, 95\% CI [0.39, 1.56]$ with a $BF_{10} = 22.27$ providing strong support. Participants at home reported feeling significantly 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 significantly more pleasant ($M = 5.40, SD = 1.47$) than those in the interview room condition ($M = 3.72, SD = 1.27$), $t(72) = 5.25, p < .001, d = 1.22, 95\% CI [1.04, 2.32]$, $BF_{10} = 9,623.94$).

3.3 | State anxiety

Participants in the home condition experienced similar levels of state anxiety (range: 21–59, $M = 34.68$, $SD = 8.19$) to those interviewed in the formal interview room ($M = 35.95$, $SD = 8.13$, $t(71) = -0.664$, $p = 0.509$, $d = 0.16$, 95% CI [-5.09, 2.55]). A BF_{01} of 3.42 indicated substantial evidence in favour of the null hypothesis, thus we also rejected our third hypothesis.

4 | DISCUSSION

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

The lack of difference in the number 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 instructions, investigators may 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. When an officer is already close to the witness' home, it may be opportune for them to stop by (Officer J. Hoeijmakers, personal communication, August 29, 2018). Unlike in our study, the practical reason for interviewing a witness in a particular environment may thus not always be to improve the quality of the interview. Based on our findings, there may be actually no serious risk of losing critical information or negatively influencing rapport-building if interviews are conducted at home instead of in a formal interview room. Thus, our findings support home interviewing for convenience factor.

Our participants in the home condition reported feeling more in control and at ease, yet this did not translate to differences in perceived rapport. Perhaps as a consequence 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 two conditions. Nonetheless, the current study does provide 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. Therefore, 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 conceptualised by Collins et al. (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 Compo's (2011) examination of rapport is built on the premise that a comfortable witness is a better witness, yet comfort is not among 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, and thus 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 during the VR experience or rehearse their memory in preparation for the interview during the week prior to the interview. This situation differs from actual witness situations, where the crime occurs unexpectedly and may not be as well remembered. Participants' hypervigilance or rehearsing may thus have masked any effects of interviewing location on quantity and quality of information disclosure.

Another limitation relates to the variations within the home environments in which we interviewed the participants. Some participants lived in dorm rooms, some in shared houses, and others lived alone. The interviews also took place in the area that participants felt most comfortable in – some happened in their bedrooms, some in the kitchen, or common areas. The varying home environments could have introduced confounding variables outside of our experimental control. For example, we did not control for how long they had lived in their current home, which could influence how home-like the environment felt to them.

Further, in our study we randomly assigned the participants to either home or formal 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 individualised 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 (i.e., witness' vulnerabilities) or crime-related factors (i.e., nature and location of the crime) that ought to be considered when choosing the interview location.

Similarly, future studies could 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). Conducting and recording witness interviews at home could also be done for the purpose of capturing witnesses' emotional distress, whereby the video recording can then be used as evidence in court. In cases related to domestic violence, for example, Westera and Powell (2017) indicated that prosecutors believed interviews conducted near to the crime-scene would induce heightened emotional distress in witnesses, providing stronger evidence for their credibility. We should note here, however, that although judges and jurors rely on emotional displays, these are not reliable indicators for credibility (Landström, Ask, & Sommar, 2019).

Additionally, researchers should explore the role of distractions. In their review of UK 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) may negatively impact interview quality. The authors recommended conducting interviews at police stations instead, where the investigator has more control. While, as aforementioned, in our study the investigator did not observe salient distractors and interruptions, it would be beneficial to systematically examine how to effectively conduct interviews in distraction-prone environments (Westera & Powell, 2015).

In the present study we solely focused on the witnesses' perceived experience throughout the interview. Investigative interviews are, however, dynamic and bi-directional interactions. It is possible that investigators' own experiences in varying environments influence the dynamic they build with the witnesses. While we found that witnesses felt more comfortable and in control when interviewed at their homes, the opposite could be happening to the investigators, who are introduced to new, unfamiliar environments in which they lack the environmental control they are used to have (also see Kelly, Dawson, & Hartwig, 2019). Future research should also consider the investigator's experience. Moreover, all interviews in this study were conducted by the same investigator who was part of the research

team. Because investigator characteristics can influence witnesses' perceptions, future research could account for the interplay between investigator characteristics, the environment and witnesses' experience. For example, compared to an officer in casual clothing, the presence of a uniformed frontline officer in a witness' home could have a stronger effect on their anxiety or comfort levels.

In conclusion, our study is the first to examine empirically the practical question of whether interviewing witnesses outside of a formal environment could be beneficial. We did not find evidence for an effect of interview location, which suggests that our two locations did not differ in influencing interview outcome. This proposes the practicality of interviewing witnesses outside the police interview room if it is deemed as more convenient. Nonetheless, because this is 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. Understanding if and to what extent the interview environment can influence the interview process and its outcome, will allow us to provide practitioners with feasible recommendations that require minimal training efforts for improving investigative interviewing practice.

ACKNOWLEDGEMENTS

This research is supported by a fellowship awarded from the Erasmus Mundus Joint Doctorate Program The House of Legal Psychology (EMJD-LP) with Framework Partnership Agreement (FPA) 2013-0036 and Specific Grant Agreement (SGA) 2016-1339 to Katherine Hoogesteyn. This research as also funded by the American Psychology-Law Society (AP-LS) Grants in Aid for Students Committee.

We would like to thank Professor Rebecca Milne and the Center for Forensic Interviewing at Portsmouth University for allowing us to utilise their interview room.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ORCID

Katherine Hoogesteyn  <https://orcid.org/0000-0003-3535-8101>

Aldert Vrij  <https://orcid.org/0000-0001-8647-7763>

ENDNOTE

¹The 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 ($t(72) = 1.361, p = .178$).

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How to cite this article: Hoogesteyn K, Meijer E, Vrij A. Examining witness interviewing environments. *J Investig Psychol Offender Profil.* 2020;1–12. <https://doi.org/10.1002/jip.1549>