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Communication errors in investigative suspect interviews: the difference between avatar-conducted and human-conducted interviews

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Date: 20-07-2021

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Abstract

Investigative suspect interviews are the core of a criminal investigation. Due to the fact that law enforcement officers need to perform under high stakes and time pressure, it is likely for them to make errors. The use of technology in this setting might be the solution. Therefore, this study aimed to research the difference between avatar- and human-conducted interviews. Furthermore, this study explored how the difference between avatar- and human-conducted interviews affect the rapport between suspect and interviewer, the suspect's willingness to provide information, the suspect's trust, and the suspect's perceived communication competence of the interviewer. To examine this, an online 2 (error vs. no error) x 2 (avatar-conducted vs. human-conducted) between-subjects experiment was designed. During the experiment, the participants (N = 84) were asked to imagine themselves in a scenario of having shoplifted clothes. Following, they watched a video of an investigative interview from the suspect's perspective for which they were asked to imagine themselves being the suspect. Lastly, a follow-up questionnaire examined the dependent variables. The findings indicated no significant main effect for avatar- and human-conducted suspect interviews on the dependent variables. Besides this, there was found a main effect of a communication error on the trust level of the suspect. It was found that the trust of the suspect was significantly lower in the condition where the interviewer made a communication error. However, for the other variables, no significant main effects were found for communication errors. Lastly, this study was not able to detect an interaction effect of the type of interviewer on the relationship between making a communication error and trust, and rapport. The results showed a significant main effect on trust, which has previously proven to be of importance in suspect interviews. As communication errors in suspect interviews are almost inevitable, it is recommended for future research to direct its focus towards repairing trust after a communication error. Finally, even though the results give us the first hints that there may not be that much difference between an avatar and a human in performing suspect interviews, this area is still relatively unknown. So, to further explore the findings of this study, the difference between avatars and humans in real-life interviews should be investigated.

Keywords: Investigative suspect interviews, avatars, communication errors, rapport, willingness to provide information, trust, perceived communication competence

Introduction

Investigative suspect interviews are an integral element in law enforcement investigations. The main goal in investigative interviews is for the interviewer to gain as much information as possible and to gain the trust of the suspect (Aaker, Kumar, Leone, & Day, 2012; Vecchi, van Hasselt, & Romano, 2005). More specifically, the relationship between the interviewer and suspect strongly determines the cooperation of the suspect and the chance of achieving the purpose of the investigation, serving justice (Gudjonsson, 2010; Gudjonsson, 2006). For this to happen, a close and trusting relationship with competent communication functions as an important element (Aaker et al., 2012; Leahy-Harland & Bull, 2017). Even though law enforcement officers are highly trained professionals, due to the high pressure and stakes in suspect interviews, it is almost inevitable for the interviewer to make some kind of error (e.g., recall the wrong name or reflect the wrong emotion) (Ciguralov, Chan, & Rosecrance, 2010). Making a communication error can be detrimental and jeopardize the relationship between the law enforcement officer and suspect (Gudjonsson, 2003). Recently, a study by Oostinga, Giebels, and Taylor (2018) investigated the effects of communication errors in high-risk situations like suspect interviews and crisis negotiations, which indicated that communication errors might indeed compromise the important elements for successful investigative interviews.

In this study, we add one additional element in exploring the effects of communication errors in investigative suspect interviews: avatars. Since technology is progressing like never before, it is likely to see the use of avatars by law enforcement increase. Avatars are interactive, graphic representations of humans in digital form, and they can be used in different settings to interact with humans. This can vary from profile photos to videogames to organizational contexts (Meadows, 2007). During the interaction with technology such as avatars, humans make use of social rules, categorization processes, stereotypes, and assumptions (Bogost, 2012). More specifically, individuals engage with technology according to those assumptions and stereotypes, which reinforces the avatars' autonomy. This implies that one could consider avatars as potentially independent entities and social actors who are capable of influencing their environment where humans also treat them as such (Nowak, Hamilton, & Hammond, 2009). This raises the question of whether avatars are capable of also performing like humans in investigative suspect interviews. When keeping this in mind, including a humanlike feature to an avatar, such as making an error, could be useful and interesting to see how this might influence the interaction between avatars and humans. Even

though recently Oostinga et al. (2018) investigated the effects of communication errors in suspect interviews and crisis negotiations, we are still unaware of the consequences and effects of communication errors in avatar-conducted investigative suspect interviews and the relationship between avatars and humans in this specific setting.

In the current study, a comparison is made between errors made by humans or by avatars and their effect on important factors in suspect interviews: the trust of the suspect, willingness to provide information of the suspect, the (positive) relationship between the officer and suspect, and the perceived communication competence of the interviewer. More knowledge about this will give us a better insight into the effects of avatar-conducted communication versus human-conducted communication and how errors might influence these types of interactions. The possibility of being able to implement technology that is not biased or subject to high pressure and can be changed to any profile similar to that of the suspect may enhance the efficiency of investigative suspect interviews considerably. So, exploring the functioning of avatars in this setting could prepare us better for the future to see whether it is feasible to have avatar-conducted interviews, especially in this context, where errors can be detrimental.

In the following sections, first, we explain what investigative suspect interviews are and what their goal is, and after this, an elaboration on communication errors is made. This includes an explanation of different types of errors and how they might affect the receiver of the error.

Avatar-conducted vs. human-conducted investigative suspect interviews

Forensic investigation of physical evidence and the importance of it in law enforcement is increasing. Nonetheless, investigative suspect interviews are of key importance in progressing the investigation (Holmberg & Christianson, 2002). As mentioned before, the interviewer wants to establish a close relationship with the suspect to increase the successfulness (e.g., provision of useful information) of the interview (Aaker et al., 2012; Gudjonsson, 2010; Vecchi et al., 2005). It is found to be that the first contact between suspect and interviewer is essential since within five minutes, individuals already unconsciously shape social evaluations of the other (Jaques, McDuff, Kim, & Pickard, 2016; Willis & Todorov, 2006). In other words, in a small timespan of the suspect interview, the suspect already shapes an image of the interviewer, whether human or avatar, that can determine the course of the interview. As avatars are evaluated the same as humans and might be able to act as autonomous social actors in ordinary situations (Bogost, 2012; Nowak, Hamilton, & Hammond, 2009), the

question is whether this also goes for less conventional settings such as investigative suspect interviews.

Rapport. There is a great variety in tactics used in investigative suspect interviews, but they all have one underpinning key aspect: gaining a trusting relationship (Gudjonsson, 2010). To change the suspect's attitude and to make the interview more accurate and attractive for the suspect to cooperate, the building of rapport plays a significant role (Fisher & Geiselman, 1992; Gass & Seiter, 2010). Rapport could be defined as a "harmonious, empathetic, or sympathetic relation or connection to another self" and an "accord or affinity, in an ecological alignment with another system" (Newberry & Stubbs, 1990, p.14, as cited in Collins, Lincoln, & Frank, 2002). In other words, ideally, there is a warm relationship with mutual interest and attention between the interviewer and suspect during the interview.

It is found that a supportive interviewer has a significantly higher chance of building rapport with the suspect in comparison to a cold and distant interviewer (Zulawski & Wicklander, 1993). Additionally, when the interviewer and suspect have a more stable interaction and positive interpersonal relationship in which they get along, the interview increases in successfulness since it generates a better working alliance and trust between the interviewer and suspect (Collins, Lincoln, & Frank, 2002; Madsen & Holmberg, 2015). So, for the interviewer to establish rapport with the interviewer is beneficial in a suspect interview. However, there might be a difference in establishing rapport with the suspect between avatar interviewers and human interviewers.

It is found to be that interaction with technology does not meet the norm for general human interaction. This means that the interpersonal relationship between technology and humans is considerably lower compared to the interpersonal relationship between two humans (Lee & Nass, 2002). In addition, Schectman and Horowitz (2003), who investigated the differences between interacting with a computer and a human in scripted conversational responses, found that interaction with a human-generated a higher relational level compared to interaction with a computer. This indicates that, when all else is being equal, the suspect interacting with a human interviewer would generate more rapport compared to interacting with an avatar interviewer. Therefore, it is hypothesized that:

> *H1a:* The suspects' perceived rapport with the interviewer is higher in human-conducted interviews compared to avatar-conducted interviews

Willingness to provide information. In general, to make progress in a criminal investigation, suspects are interviewed as a means to acquire information. The goal of the suspect interview is to obtain as much elaborate and detailed information as possible

(Oxburgh, Myklebust, & Grant, 2010). Richman, Kiesler, Weisband, and Drasgow (1999) found that in the interaction with artificial intelligence, individuals are inclined to disclose more sensitive information in comparison with human-to-human interaction. Not only do humans share more information with artificial intelligence, but also the opposite appears to be true: humans tend to disclose less information in the presence of a human face. In the study of Lind, Schober, Conrad, and Reichert (2013), they compared online interactions of avatars with more and less facial movement. They found that disclosure of sensitive information declines in the presence of a human face. This means that interacting in the presence of any human face (e.g. online or in real life), sharing information declines, and the absence of a human face stimulates information provision. Joinson (2007) found that this might be the case because of a decline in 'social boundaries' in avatar-conducted communication. This decline can be explained as the outcome of two aspects. Firstly, according to Kang and Gratch (2010), individuals feel less socially evaluated as compared to human-conducted communication. Secondly, avatar-conducted, or technology-mediated communication in general, does not evoke 'impression management' as much as human-mediated communication. With impression management, it is meant that it is for the interviewees interviewed by avatars more effortless to fully concentrate on the questions asked and giving an as much detailed answer as possible on that question instead of focusing on influencing how the interviewer perceives them (O'Reilly, Hubbard, Lessler, Biemer, & Turner, 1994). Besides, several studies on collecting online information have found that artificial intelligence and human-controlled avatars can function properly in this process (Bailenson, Yee, Merget, & Schroeder, 2006; Hasler, Tuchman, & Friedman, 2013). All in all, this information elucidates the impression that suspects would feel more comfortable and less judged in interviews conducted by avatars, and thus, be more likely to share (sensitive) information in comparison to human-conducted interviews. Therefore, it is hypothesized that:

> *H1b:* The willingness of the suspect to share information with the interviewer is higher in avatar-conducted interviews compared to human-conducted interviews

Trust. Another key aspect in investigative suspect interviews is the level of trust of the suspect towards the law enforcement officer (Beune, Giebels, Adair, & Van der Zee, 2011; Lind, 2001). McAllister (1995) distinguishes between two elements in trust: affect-based trust and cognition-based trust. The first reflects in emotional investment with sincere care and concern towards each other in which reciprocity plays a key role. The latter reflects the image one has of the other. So, in other words, reputations and expectations of reliability, dependability, and professionalism are attributable to this type of trust. Based on the self-

disclosure theory, which states that trust between individuals grows by reciprocally sharing experiences, emotions and listening to each other, humans are more likely to build a trusting relationship with another human than with a piece of technology (Jourard, 1971, as cited in Pickard, Roster, & Chen, 2016). This could be because avatars do no possess the level of emotional and social intellect as humans do, and individuals tend to trust someone when the other is more open and approachable to interact with (Cassell, 2001; Pickard et al., 2016). Besides that, according to Gray, Gray, and Wegner (2007), humans are more capable of sharing experiences and emotions compared to avatars, and humans do not perceive robots as able to comprehend and respond to human social emotions. This could mean that avatars are less likely to gain the trust of the suspect compared to a human. However, anthropomorphic studies, which research the attribution of human characteristics and traits to non-human things, found that individuals communicating with something or someone non-human are evaluated as more credible, attractive and competent when it contains more human-like features and representations (Nowak et al., 2009; Nowak & Fox, 2018; Westerman, Tamborini, & Bowman, 2015). Nevertheless, in studies researching humans' trust and preference between opinions of other humans compared to those of automation and algorithms, it was consistently found that humans prefer and trust humans. This was even the case when the technology was known to be more skillful and advanced (Onkal et al., 2009; Promberger & Baron, 2006). Thereby implying that in a suspect interview, the suspect is more likely to trust a human interviewer over an avatar interviewer. Therefore it is hypothesized that:

> *H1c:* The suspect's trust in the interviewer is higher in interviews conducted by humans compared to avatar-conducted interviews

Perceived communication competence. In order to get information from the suspect, the interviewer needs to be communicatively competent with him or her. To be communicatively competent is defined by Wiemann (1997, p.198) as 'having the ability to choose among available communicative behaviors to accomplish one's own interpersonal goals during an encounter while maintaining the face and line of fellow interactants within the constraints of the situation". In other words, being communicatively competent is being able to apply the appropriate communication at the right moment in an interaction. According to Walsh and Bull (2012), competent communication is a very important aspect in investigative suspect interviewing. When the interviewer communicates competently, the suspect is more likely to cooperate and provide information (Leahy-Harland & Bull, 2017). By effectively and appropriately communicating, relationship quality is perceived higher by both parties

involved. The other way around, insufficiently communicating makes the other perceive you as incompetent and unable to provide relational rewards and thus perceives the relationship quality as low (Flora & Segrin, 1999). This means that interviewers who are effectively communicating with the suspects have a greater chance of being recognized as competent communicators, which will also enhance relationship building.

Even though there is not much existing literature on the differences in perceived communication competence between avatar and human, it is found that communicating with an avatar containing low or no behavioral human-like features, individuals consider their capacity to sufficiently communicate lower (Bailenson et al., 2005; Hamilton & Nowak, 2010). This implies that more human-like avatars are expected to perform better compared to avatars that are less human-like. Nonetheless, when comparing avatars to humans, it is found to be that humans are more capable of responding to emotional behavior of the other (Gray et al., 2007). Essentially, this might mean that in suspect interviews, with high stakes for the suspect, human interviewers are better able to competently communicate with regards to the situation. Therefore, it is hypothesized that:

> *H1d:* The suspect's perceived communication competence of the interviewer is higher in human-conducted interviews compared to avatar-conducted interviews

Communication errors in investigative suspect interviews

Even though law enforcement officers try to perform as well as possible, in high stake situations, for which they might have little time to prepare, it is likely that they, at some point, make a communication error in an investigative suspect interview. In the study of Oostinga et al. (2018), they explained three types of communication errors in this setting: factual, judgment, and contextual. Factual errors can be explained as information stated by the law enforcement officer that is objectively wrong (e.g., using the wrong name). Judgment errors are subjective mistakes that can be explained as a misinterpretation of the law enforcement officer of the feelings or emotions that the suspect has (e.g., wrongly reflecting why the suspect would commit a crime). Lastly, contextual errors are mistakes regarding procedures that are undertaken (e.g., using police tactical language). This study only focuses on judgment errors, since Oostinga et al. (2018) found that this type of error has the highest effect on the other individual in the interview.

Rapport. Communication errors can compromise the relationship between the officer and the suspect. Research by Thoroughgood, Sawyer, and Hunter (2013) indicates that judgment errors, like mistakes in recognizing what someone needs (e.g., support or rewards),

significantly decline the relationship between employee and leader. Arguably, these findings imply that a judgment error made by the interviewer could negatively influence the relationship with the suspect. In addition to this, Walsh and Bull (2012), indicate that after making an error, it is considerably onerous to build and maintain rapport. Flora and Segrin (1999) found that individuals interacting with someone who displays communicational errors, perceive their relationship quality rather poorly and are less satisfied with the other. Lastly, the study of Oostinga et al. (2018) found that judgment errors decrease the relation between suspect and interviewer. This means that the rapport gets undermined by judgment errors. So, sufficient communication gives a greater probability of higher relationship quality and satisfaction. This might mean that communication errors by the interviewer could imperil this and cause a lower level of rapport between them. Applying this knowledge to this study, it is anticipated that:

> *H2a:* The suspect's perceived rapport with the interviewer is higher when no error is made by the interviewer in comparison to when an error is made by the interviewer.

Willingness to provide information. Poor investigative interviews containing communication errors like complex or inadequate questioning can cause the suspect to share less and provide unambiguous responses (Gudjonsson, 2003; Milne & Bull, 1999). Nevertheless, in the study of Oostinga et al. (2018), their findings were that a judgment error led to an increase in information provision. Even though this sounds counterintuitive, the mechanism behind it might clarify this increase in provision. As a consequence of the error, the suspect provides more information and details because they want to show that they are correct. So, by trying to prove their correctness, the suspect actually provided more detailed information (as evidence). According to Oostinga et al., (2018) a possible explanation behind this phenomenon could be that the error might be perceived as a threat to the ego of the suspect or doubts the suspect's integrity. This incentivizes the suspect to contradict this error and improve it by providing a more detailed explanation. Even though this study did not find significant results for the willingness but only for the provision of information it is still relevant for this study because it does contribute to providing more information. Moreover, Milne, Shaw, and Bull (2007) did find that erroneous interviewing results in the suspect not being able and willing to provide their best statement in the interview. Additionally, Bull (2014) indicates that communication is key in suspect interviews and that errors decrease the willingness of the suspect to cooperate in the interview. An explanation could be that the suspect perceives the interviewer as not being sincere after making an error (Shepard, 1993). This indicates that communication errors made by the interviewer can impair the information

provision of the suspect. Therefore, it is expected that:

H2b: The willingness of the suspect to share information with the interviewer is higher when no error is made by the interviewer in comparison to when an error is made by the interviewer.

Trust. The perceived trustworthiness of an individual is amongst other factors, based on the ability of the individual (Mayer, Davis, & Schoorman, 1995). In particular how the other perceives whether the individual in question is able to realize their expectations and goals determines the trust level (Sheppard & Sherman, 1998). Applying this to the suspect interview setting, the trust of the suspect is dictated by the interviewers' ability to handle the situation and accomplish the goals of the suspect. According to Shepard (1993), making an error threatens this. His research indicates that a communication error causes a lack of trust towards the officer. Also, since trust is strongly associated with reliability (Rossi, Dautenhahn, Koay, & Walters, 2017), it can be said that an error made by the interviewer could very well compromise the trust level of the suspect. An error affects the perceived reliability because an individual has certain expectations of what they interact with. When these expectations are not realized due to, for example, a communication error, the individual's initial expectation does not connect to what they experience and thus causes low perceived reliability and trust (Groom et al., 2011). Therefore, it is predicted that:

H2c: The trust of the suspect in the interviewer is higher when no error is made by the interviewer in comparison to when an error is made by the interviewer

Additionally, it is possible that an error made by an avatar as interviewer affects the rapport and trust to a greater extent than an error made by a human interviewer. Several studies investigating the relationship between a robot and humans indicate that an error will negatively influence the trust and relationship between the interviewer and suspect more when the interviewer is an avatar compared to a human interviewer. Multiple studies investigating the relationship between robots and humans found that an 'unforeseen occurrence', like an error, will negatively influence the relationship between individual and robot, even if the mistake was corrected (Alvarado-Valencia, & Barrero, 2014; Hamacher, Bianchi-Berthouze, Pipe, & Eder, 2016; de Visser et al., 2016). Since trust is strongly associated with perceived competence and reliability (Rossi, Dautenhahn, Koay, & Walters, 2017), it can be said that making errors could both be bad for both the trust and the relationship between officer and suspect. This difference could be because trust in technology and the relationship with technology differ in avatars compared to humans. According to Muir and Moray (1996) trust in machines or technology is mainly based on the extent to which it performs its function correctly. To elaborate on this, Madhaven and Wiegmann (2007) found that something

automated like an avatar is perceived as infallible and perfect, whereas humans are perceived to be innately fallible. So, when humans make an error, it is already somewhat expected, but when technology would make an error, this is unexpected and thus affects the relationship to a greater extent. So, the expected infallibility of technology indicates that an error made by the avatar in the interview might damage the relationship of the suspect more than an error made by a human interviewer, since trust in technology strongly and mainly depends on its reliability and is less expected. Therefore, an interaction effect is expected whereby:

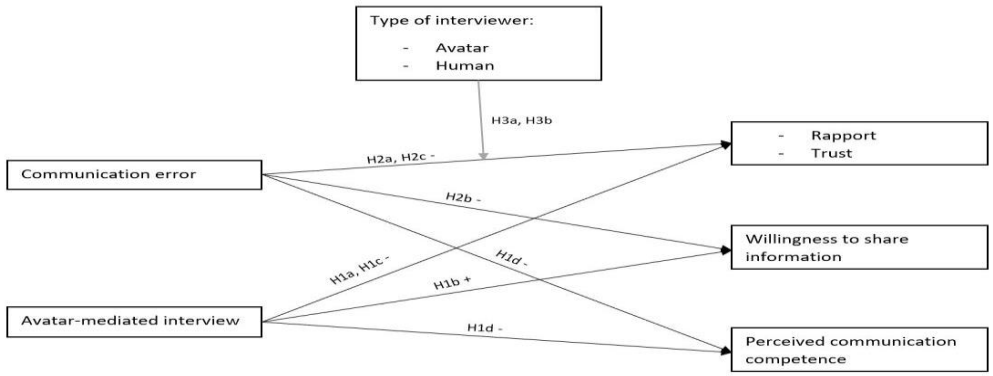
> *H3a:* The type of interviewer has a moderation effect on the relationship between the making of an error and trust, where in the interview in which an error is made by an avatar, less trust is experienced by the suspect compared to an interview in which the error is made by a human
> *H3b:* The type of interviewer has a moderation effect on the relationship between the type of interviewer and rapport, where an error made by an avatar leads to a lower level of rapport between the suspect and interviewer compared to an error made by a human

Perceived communication competence. For the suspect interview to be doing well, it is important for the interviewer to sufficiently communicate with the suspect (Gudjonsson, 2003). As it might speak for itself, communication errors made by the interviewer could affect the suspect's perceived communication competence of the interviewer negatively. It is found to be that judgment errors cause the receiver of the error to perceive the maker of the error as less dedicated to their job, less competent, and less professional (Vignovic & Thompson, 2010). It is found that in suspect interviews, the suspect questions the competence of the interviewer when the interviewer makes a communication error (Gudjonsson, 2003; Moston, Stephenson, Williamson, 1992; Oxburgh et al., 2010). This is because making mistakes gives the suspect a hard time to reason with and understand the interviewer (Moston et al., 1992). As a consequence, the suspect perceives the interviewer to be less competent in performing the interview sufficiently. This all implies that a communication error of the interviewer could negatively influence the suspect's perception of the interviewer, in both their ability and perceived competence. Therefore, it is hypothesized that:

> *H2d:* The suspect's perceived communication competence of the interviewer is higher when no error is made by the interviewer in comparison to an error made by the interviewer

Figure 1.

Representation of the discussed research variables and their relationship with each other.



Methods

Design

To test the hypotheses, an experiment is conducted in which participants were divided into four conditions. The participants were randomly assigned to a 2 (error vs. no error) x 2 (avatar-conducted vs. human-conducted) between-subjects design. Each participant was randomly assigned to one of the four conditions. This study is part of a larger project in which we measured more dependent variables, but in this study, we only focused on rapport, willingness to provide information, trust, and perceived communication competence as the dependent variables.

Participants

In this study, a total of 109 participants participated. To participate, the participants needed to be at least 18 years old and be able to understand English participated in this study. The participants were recruited through the student portal of the University of Twente (Sona) and through contacting acquaintances and through sharing a link via social media. All participants provided informed consent and the study was approved by the BMS ethical committee of the University of Twente. Out of the 109 participants, 25 were excluded because of incomplete responses. Drop-out mostly occurred in the avatar and error condition which caused un uneven division between the remaining 84 participants (human $n = 50$, avatar $n = 34$, no error $n = 49$, and error $n = 34$). Of the remaining 84 participants, 40 were male (47.6%) and 37 were German (44%; the others were Dutch $n = 29$, and Other $n = 18$). The mean age of the participants was 25.85 years ($SD = 10.22$).

Measures

Rapport. We measured participants' post-interview perceived rapport with the interviewer using Duke, Wood, Bollin, Scullin, and LaBianca's (2018) Rs3i scale. Using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), participants were asked to what extent they agreed with statements like: "the interviewer really listened to what I had to say" and "I think the interviewer is generally honest with me". We decided to leave three statements out of the scale: "the interviewer and I have our culture in common", "the interviewer and I probably share the same ethnicity", and "the interviewer probably shares my culture". We left these statements out because they do not apply to our study since this study made use of an avatar. We averaged the items to create the rapport scale and a high average score on this scale means that the participant experienced a higher level of rapport with the interviewer. The Cronbach's Alpha regarding this measure was .90 which indicates excellent internal reliability.

Willingness to share information. To assess the willingness to share information of the participants, we used the Beune et al. (2011) three-item scale. Using a 6-point scale ranging from 1 (strongly disagree) to 6 (strongly agree), participants were asked to what extent they agreed with statements like: "would you tell the interviewer everything you know?", "would you give the interviewer a lot of information?", and "would you give the interviewer truthful information?". We averaged the items to create the scale and a high average score on this scale means that the participant is more willing to share information with the interviewer. The Cronbach's Alpha concerning this scale was .82 which indicates good internal reliability.

Trust. We measured participants' post-interview trust for the interviewer using the scale of Colquitt, LePine, Piccolo, Zapata, and Rich (2012). The scale measured affect- and cognition-based trust. To measure affect-based trust, we used three of the five items. Following Oostinga et al., (2018) we discarded two items that did not apply to the current setting since it refers to a long-term working relationship (e.g., 'we would both feel a sense of loss if one of us was transferred'). Specifically, using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), participants were asked to what extent they agreed with statements like: 'the interviewer and I freely share our ideas and feelings'. For the cognition-based trust, we used 3 of the 6 items of the scale. 'I can rely on my supervisor to not make my job more difficult' was discarded since it focuses on the job setting. The other two discarded were not applicable since the items referred to how peers of the participants see the interviewer. Using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree),

participants were asked to what extent they agreed with statements like: 'The interviewer approaches his/her job with dedication'. The reversed item was reversed to make sure that after the items were averaged, a high average score on these scales indicates a high trust level of the participant. This scale's Cronbach's Alpha was .54 which indicates questionable internal consistency. Since this scale measures both affective and cognitive trust, we also assessed the separate constructs to test whether this would give use higher a Cronbach's Alpha. As the divided Alpha's were also questionable (affective $\alpha = .59$, cognitive $\alpha = .39$), we decided to use the combined scale.

Perceived communication competence. We measured the participants' post-interview perceived communication competence of the interviewer using 26 items of Wiemann's (1997) 35-item communicative competence scale. The nine discarded items were not applicable in this setting since it refers to a long-term relationship with the subject (e.g., 'S's personal relations are cold and distant'). Using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), participants were asked to what extent they agreed with statements such as: 'the interviewer is a good listener', 'the interviewer is relaxed and comfortable when speaking', and 'the interviewer pays attention to the conversation'. Reversed items were reversed to make sure that, after the items were averaged, a high average score on this scale meant a high perceived communication competence of the participant in the interviewer. The perceived communication competence scale showed excellent internal reliability with a Cronbach's Alpha of .90.

Procedure

After providing consent for participating in this study, the participants were presented with a scenario. The participants were asked to imagine that they were the person in the scenario described. They were provided with a scenario about an individual who has financial issues due to losing his/her job. In order to feel better, this particular individual shoplifted some clothes from the mall and is now being accused of shoplifting. Next to this, the background story contained information about how they stole the clothes, some demographics of the individual, and some other basic information (see appendix A for the background story). The background story was constructed in a way to make it relatable for each participant. So, it did not matter whether the participants were male or female, younger or older.

To prevent biased results, we used a cover story instead of providing the participants with all the details about the purpose and content of the study (see appendix B for the full cover story). While actually participating in a study that investigates the differences in the

effect of a communication error between avatar-conducted suspect interviews and human-conducted suspect interviews, the participants were told that this study investigates the differences between one- and two-person interviews and were all told to be in the one-person group.

Following the background- and cover story, a video of an investigative suspect interview was shown to the participants. Before watching the video, the participants were asked to imagine that they were the suspect being questioned. Following Koudenburg, Postmes, and Gordijn (2011), in the video, the suspect was filmed from the back of the head and the interviewer from the front. The participants saw a role-play of an interviewer and suspect in which the suspect answers questions from the investigative interviewer. It was filmed from the perspective of the suspect (see appendix C for pictures of the interview setup), to make it easier for the participant to really imagine that they were the ones being interviewed and put themselves in the perspective of the suspect.

Each participant was randomly assigned to one of the four conditions. In the 'avatar-conducted' condition, the participants watched a video of an investigative suspect interview which was performed by an avatar, whereas the 'human-conducted' interview was performed by a human. As for the 'error' condition, the participants watched a video where the interviewer makes a judgment error during the questioning of the suspect. The judgment error was displayed in the interview by paraphrasing the wrong motive for committing the crime. So, in the error condition, the suspect would explain that they stole the clothes because of financial issues, after which the interview makes the error by paraphrasing: "so you stole the clothes for the thrill of it?". In the 'no error' condition, participants watched an investigative suspect interview that did not contain any error made by the interviewer. So, after the suspect states that they stole the clothes because of financial issues, the interviewer states: "so you stole the clothes because of financial issues?" (see appendix D for the full interviews of all the conditions). Inspired by the design of Oostinga et al. (2018), the investigative suspect interview had a humanitarian approach. Making use of a humanitarian approach essentially means an empathetic, open, and non-judgmental procedure. This can be recognized in the interviewer asking the suspects' perspective (e.g., "I want to hear your side of the story") and also in the openness about the general guidelines of the interview (e.g., "I want to talk about some ground rules and practical matters"). Later on in the interview, evidence was provided and the interviewer gave the suspect multiple chances to explain what they did.

After carefully watching the video, the participants were asked to fill in a questionnaire containing several scales to measure their trust in the interviewer, rapport,

willingness to share information, and their perceived communication competence of the interviewer (see appendix E for the questionnaire). They were asked to fill in the questionnaire whilst still imagining that they were the suspect in the video. Besides this, the questionnaire contained some demographic questions (e.g., age and gender). After the questionnaire, the participants were debriefed about the actual purpose and content of the study and were asked to not share any information about this to other (possible) participants (see appendix F for full debriefing story). Lastly, they were thanked for participating in this study. Participants that entered the study through Sona received credits for participating.

Results

Scale reliability

The means, standard deviations, Cronbach's Alphas, and correlations among the variables are displayed in Table 1. As you can see in Table 1, all the measures had good to excellent internal reliability except for trust, which had questionable internal reliability. Besides this, there were positive, significant correlations among rapport, willingness to provide information, trust, and perceived communication competence. This means that higher levels of one variable are established when higher levels of the other variable were established and vice versa.

Table 1

Means, standard deviations, and inter-correlations among variables.

Variables	*M*	*SD*	*α*	1	2	3
1.Rapport	3.35	.58	.90			
2.Willingness to provide information	3.52	1.11	.82	.44**		
3.Trust	2.96	.51	.54	.72**	.35**	
4.Perceived communication competence	3.16	.50	.90	.77**	.32**	.82**

Note: N=84

**p <.01

Hypotheses testing

To analyze the data, IBM SPSS Statistics 27 was used. To test our hypotheses, a two-way MANOVA was used. In this model, interviewer type (avatar or human) and error condition (communication error or no communication error) functioned as the independent variables, and rapport, trust, willingness to share information, and perceived communication competence functioned as the dependent variables. Assessing the full model, the interaction effect on willingness to provide information and perceived communication competence was excluded.

Multivariate effect interviewer type. Table 2 presents the means and standard deviations of rapport, willingness to provide information, trust, and perceived communication competence as a function of interviewer type. To test our prediction that rapport (H1a), trust (H1c), and perceived communication competence (H1d) are higher in the human-conducted investigative interviews and that the willingness to provide information (H1b) is higher in avatar-conducted interviews, we looked at the main effects of rapport, willingness to provide information, trust, and perceived communication competence with regards to the interviewer type.

There was no significant multivariate effect of interviewer type, $F(4, 78) = .112$, $p = .978$, with no significant main effects for rapport, $F(1, 81) = .058$, $p = .810$, $\eta 2 = .001$, willingness to provide information, $F(1, 81) = .024$, $p = .876$, $\eta 2 = .000$, trust, $F(1, 81) = .040$, $p = .842$, $\eta 2 = .000$, and perceived communication competence, $F(1, 81) = .016$, $p = .900$, $\eta 2 = .000$.

This means that our hypotheses found no support. More specifically, this model cannot distinguish significant differences in effect between the avatar and human interviewer, which implies that interviewer type does not necessarily influence the rapport between suspect and interviewer, the suspect's trust, the willingness of the suspect to share information, and the suspect's perceived communication competence of the interviewer.

Table 2

Means and standard deviations for dependent variables depending on the interviewer type (human or avatar).

	Interviewer type			
	Human (n = 50)		Avatar (n = 34)	
	M	*SD*	*M*	*SD*
1.Rapport	3.33	0.58	3.38	0.59
2.Willingness to provide information	3.49	1.17	3.58	1.04
3. Trust	2.93	0.48	3.01	0.58
4.Perceived communication competence	3.14	0.46	3.17	0.56

Multivariate analysis of variance error condition. Table 3 presents the influence of a communication error on the perception and relationship of the suspect and interviewer. To test our hypothesis that a communication error would negatively influence the rapport between suspect and interviewer (H2a), the willingness of the suspect to share information (H2b), the trust of the suspect in the interviewer (H2c), and the suspect's perceived communication competence of the interviewer (H2d), we looked at the main effects of rapport, willingness to provide information, trust, and perceived communication competence with regards to the error condition.

There was found to be a non-significant multivariate effect of a communication error, $F(4, 78) = 2.00$, $p = .103$, with non-significant main effects found for rapport, $F(1, 81) = .51$, $p = .475$, $\eta 2 = .006$, willingness to share information, $F(1, 81) = 1.00$, $p = .320$, $\eta 2 = .012$, and a marginally significant main effect for perceived communication competence, $F(1, 81) = 3.71$, $p = .058$, $\eta 2 = .044$. However, there was a significant main effect for trust, $F(1, 81) = 5.25$, $p = .025$, $\eta 2 = .061$.

This non-significant multivariate effect indicates no support for our hypotheses since the model cannot distinguish any substantial differences between the two conditions. This thus

means that a communication error does not necessarily affect the rapport between suspect and interviewer, the willingness of the suspect to share information, the suspect's trust, and the suspect's perceived communication competence. However, the multivariate effect was close to being significant and, besides this, we also found a marginally significant effect for perceived communication competence and a significant effect for trust. Both perceived communication competence and trust were higher in the condition where no error was made by the interviewer compared to when the interviewer did make an error.

Table 3

Comparison of the means and standard deviations of the dependent variables as a function of the communication error condition (error and no error)

	Communication error			
	No error *(n* = 49)		Error *(n* = 35)	
	M	*SD*	*M*	*SD*
1.Rapport	3.39	0.64	3.29	0.49
2.Willingness to provide information	3.63	1.11	3.37	1.12
3. Trust	3.07[a]	0.50	2.81[a]	0.49
4.Perceived communication competence	3.24[b]	0.48	3.03[b]	0.50

[a]Significant difference between error conditions.

[b]Marginal significant difference between error conditions.

Interaction effect. It was predicted that there is an interaction effect of the interviewer type on the relationship between the communication error and rapport and trust (H3). The results of the two-way MANOVA indicate no statistically significant interaction effect between the type of interviewer and communication error on the level of rapport and trust, $F(2,79) = .960$, $p = .387$. Further exploring, there was for both rapport, $F(1, 80) = 1.87$, $p = .175$, and trust, $F(1, 80) = 1.36$, $p = .248$, no significant effect found. This means that there is no difference in the impact of a communication error on trust and rapport between the

suspect, whether the interviewer was human or an avatar. Thus, this indicates no interaction effect of the interviewer type on trust and rapport, and thus, no support is found for the hypotheses.

Exploratory analysis. Even though no significant interaction effect was found for trust and rapport, we decided to also explore possible interaction effects between the type of interviewer and communication error on the suspect's willingness to provide information, and the suspect's perceived communication competence of the interviewer. The results indicate no statically significant interaction effect on the willingness to provide information, $F(1, 80) = 0.078$, $p = .780$, and perceived communication competence, $F(1, 80) = 2.71$, $p = .162$. This indicates that there is no interaction effect of the interviewer type on the willingness to provide information and perceived communication competence.

Discussion

Overview of the findings

This study has made an effort to explore whether avatars can be implemented in the law enforcement setting to perform investigative suspect interviews instead of humans. To recapitulate, the aim of this study was to investigate the differences in the effect of communication errors between avatar- and human-conducted suspect interviews. The difference between human and avatar was examined by comparing how the communication errors affected the rapport between suspect and interviewer, the willingness of the suspect to share information, the trust of the suspect, and the suspect's perceived communication competence of the interviewer.

Communication error. Firstly, in line with what was expected, the results validate the presumption that a communication error of the interviewer made in the suspect interviewer significantly decreases the trust that the suspect has in the interviewer compared to the interviews where no error was made. This is in line with the study of Oostinga et al. (2018), Rossi et al. (2017), and Shepard (1993) in which they found that errors by the interviewer during the investigative suspect interview negatively influence the trust of the suspect. Furthermore, this finding connects to the already existing literature, which states that making an error undermines the expectations of the suspect and, as a consequence, makes the suspect perceive the interviewer as less reliable. As a consequence, the trust of the suspect reduces (Groom et al., 2011; Shepard, 1993). Besides the significant effect for trust, our results suggested a marginally significant effect on the suspect's perceived communication competence, implying that with a bigger sample size, a communication error may have

significantly threatened the perception the suspect has of the interviewer's communication competence. As for this sample, there is only found a trend, so it is recommended for future research to try to get a deeper insight into the suspect's perceived communication competence of the interviewer after making a communication error by using a bigger sample size. By using a bigger sample size, it allows you to be more certain whether there actually is an effect or not. This will make it easier to comprehend whether the results are in line with the current literature, which articulates what one might expect, that a communication error would negatively influence the perception of the suspect on the interviewer's communication competence (Shepard, 1993; Vignovic & Thompson, 2010).

Secondly, the expectations relating to the effect of communication errors on rapport and the willingness to provide information were not confirmed by the results in this study. The study found no support for the notion that communication errors decrease rapport between suspect and interviewer (Flora & Segrin, 1999; Oostinga et al., 2018; Walsh & Bull, 2012), or decrease the willingness of the suspect to share information (Gudjonsson, 2003; Milne et al., 2007; Shepard, 1993). The incompatibility between our results and the already existing literature could be attributable to the context of this study. Since the study was in an online setting, it might be harder for individuals to build a connected relationship with an online interviewer since there was no real interaction between the participant and interviewer. In addition, it is also possible that the duration of the interview is not long enough for the participants to acquire a relationship with the interviewer. It might be hard to build rapport in an online setting within a time span of five minutes. The before mentioned studies base their results and conclusions on face-to-face interviews in real-life law enforcement interviews (Gudjonsson, 2003; Milne et al., 2007; Shepard, 1993; Walsh & Bull, 2012). As this study used a brief online scenario with the participant imagining that they are the suspect, it might be the case that the relationship built with the interviewer is different compared to interviews that are face-to-face and take longer. Therefore, it could be that the short duration combined with the online scenario used in this study does not fully bring out the consequences of communication errors like they might do in real-life situations where the suspect sits face-to-face with the interviewer. This corroborates with the findings of Lievens, Chasteen, Day, and Christianson (2016), which indicate that within a different setting, different traits, behavior, and attitudes get evoked. Thus, the online setting of the interview might generate different demeanors and feelings for the suspect, and change how communication errors affect rapport between the suspect and interviewer.

Interviewer type. Contrary to our expectations for the type of interviewer, no significant

difference was found between avatar and human in the effects on the rapport between suspect and interviewer, the willingness of the suspect to share information, the trust of the suspect, and the suspect's perceived communication competence. These results ultimately indicate no support for all of the hypotheses designed with regards to the interviewer type. Findings of Lee and Nass (2002), and Grey, Grey, and Wagner (2002) – who mentioned that individuals have a higher chance of building rapport with a human interviewer, and trust a human interviewer more – and Gray et al. (2007) – who indicated that humans are better able to competently communicate in emotional situations and thus are more likely to be perceived as more competently communicating compared to avatars – functioned as foundations for the developed hypotheses on superiority for human interviewers on these aspects. Furthermore, we expected an interaction effect of the type of interviewer, based on findings of Alvarado-Valencia, and Barrero, (2014), Hamacher et al. (2016), and de Visser et al., (2016), which suggest that an error made by the avatar would be more detrimental for the rapport and trust between suspect and interviewer compared to a communication error made by a human. A possible explanation for this dissimilarity to the cited literature might be that there merely is no evident difference between avatars and humans in this specific high-pressure setting. Since there is a lack of current literature that has investigated the interaction of suspects with avatars in this setting, this study explores an area that is still relatively unknown. In suspect interviews, the pressure is immensely high for the law enforcement officer, but also for the suspect. It could be the case that the high-pressure setting of suspect interviews causes activation of different perceptions and attitudes for the suspect. Byrne, Silasi-Mansat, and Worthy (2015) support this notion. Their study indicates that high-pressure situations influence different attitudes, emotions, and behavior for individuals compared to low-pressure situations. This raises the question of whether the findings concerning the differences between avatars and humans also apply to the setting of investigative suspect interviews. Besides this, anthropomorphic studies could provide an alternative explanation. In these studies, it is found that rapport, trust, and perceived communication competence increase when the avatar appears more human-like (Nowak et al., 2009; Nowak & Hamilton; Nowak & Fox, 2018; Westerman, Tamborini, & Bowman, 2015). By making a communication error, the avatar interviewer could be perceived as more humane by the participants and thus not influence the rapport, trust, and perceived communication competence as much as it would generally do.

Lastly, for formulating the hypothesis on the suspect's willingness to share information, findings of Lind et al. (2013), and Kang and Gratch (2010) were used. These findings indicate that with avatar-conducted interviews, impression management does not get

activated as much as in human-conducted interviews, meaning that the suspect is more likely to share information with an avatar interviewer. Our results are not congruent with contemporary research. It could be that the nonconformity with the existing literature is attributable to the type of interaction with the avatar. Even though the mentioned studies (Lind et al., 2013; Kang & Gratch, 2010) also made use of an online setting, their participants engaged themselves with the technology. This differs from the current study in which the participants had to imagine themselves being the one interacting with the avatar whilst watching a video. It could therefore be that the distinction between an avatar and a human gets less apparent when watching an online video and not truly interacting with an avatar.

Limitations and future recommendations. This study incorporates some limitations and future recommendations that need to be addressed in light of this research. First of all, considering the restrictions due to the Covid-19, it was not possible to conduct the interviews in person and let the participant actually experience what it is like to be interviewed by an avatar. So, we decided to follow Oostinga et al. (2018) and Koudenburg et al. (2011) by letting the participants imagine themselves in a scenario of a suspect interview. Even though this is a sufficient alternative, since there is a chance of law enforcement interactions being online due to the quick progression of technology (Dekker, van den Brink, & Meijer, 2020; McGinn & Croson, 2004), it might hinder the participants to get into the perspective of the suspect. Also, it is doubtful to what extent it is even possible to build a relationship with an avatar or person when you have never seen it in real life (Deakin & Wakefield, 2014) because sharing truthful information and the building of rapport are more likely to happen in face-to-face interactions compared to online (McGinn & Croson, 2004). So, when the suspects have more difficulties with building a connection to the interviewer because of the online setting, it is questionable as to what extent the results from this setting are generalizable to situations of face-to-face interviews. Therefore, to rule out the risk of the study design from interfering, future studies should try to focus on face-to-face interviews and directly compare them to interviews in an online setting. This will give a better understanding of the difference in relationship building between interviewer and suspect for online and face-to-face interviews, and will thus provide more meaningful results.

Next to this, at the start of this study is was planned to use a Furhat robot, which essentially is a mix between an avatar and robot. Nevertheless, since the Furhat was a prototype, it contained several glitches and flaws. For example, due to an error in the hardware, the interview could not be performed in front of the real robot since the volume of

the voice would be way too high and unadaptable. This forced us to display the Furhat on a monitor and interview while sitting in front of the monitor (see appendix C). Imagining to be the person sitting in front of a monitor displaying the avatar might not feel as being interviewed by a real robot for the participants. As anthropomorphic studies have found, individuals interacting with technology perceive the technology as more credible and competent when containing more human-like features (Nowak & Fox, 2018; Westerman et al., 2015). As watching a video of an avatar displayed on a monitor is ineffective and certainly not human-like, it could be that the difference with a real-life robot is substantial. As a consequence, it is debatable whether valid conclusions can be drawn from these results since this cannot provide the right comparison between humans and avatars as interviewers. As this subject is absolutely relevant for further investigation, since Noriega (2020) has shown that, by using computer-generated agents in law enforcement setting, Artificial Intelligence in suspect interviews might have advantageous effects on the outcome of the investigation, it is strongly recommended to further look into the use of avatars in real life and how they operate in the setting of suspect interviews. This will help the participant to better experience an interview with an avatar, and as a result, it will make the comparison between avatars and humans more reliable.

Besides this, the sample of this research was rather small. As the sample size is relatively small, it is challenging to apply these results to the general population. Additionally, participants were not real criminals/suspects, so it might be hard for them to get in the perspective of one and feel guilty for shoplifting. In other studies using this method is also found to be questionable whether their outcomes could be generalizable for real-life suspect interviews (Oostinga et al., 2018; Redlich, Ghetti, & Quas, 2008). So, for future research, it is suggested to improve the sample size. By using a bigger sample size, with individuals that have experience with suspect interviews, you can acquire the most meaningful results to say something about the target group.

Lastly, the scale we used to measure trust had a questionable Cronbach's Alpha. As a consequence, the findings might be less reliable. More specifically, it means that a greater part of the test score could be attributable to error. However, the low Alpha could also be attributable to the number of items in the measure (Tavakol & Dennick, 2011). The scale used, contains six items. It could therefore be that for this sample or study, more related items should have been used. By using more items, the estimate gets more precise by decreasing the change of the result being attributable to error. So, the results acquired with this scale might not be of utmost reliability and should thus be handled carefully. Taking into account the

significant role trust plays in investigative suspect interviews and that communication error threatens trust, future studies should try to gain a deeper understanding of the mechanism behind this. As the study of Oostinga et al., (2018) indicates, there might be several strategies to preserve trust after making an error. Considering the results of the current study, investigating an effective solution after a communication error and how this affects the trust level of the suspect needs to be focused on to add up to this study.

Conclusion

This is study researched a relatively unexplored area of investigative suspect interviews. It aimed to research the difference in the effect of communication errors between avatar- and human-conducted interviews. The most important findings are that it appears that communication errors might mostly influence the trust level of the suspect, and that there are no found differences between the influence that an avatar-conducted interview has on the rapport between the suspect and interviewer, the willingness of the suspect to share information, the trust of the suspect, and the suspect's perceived communication competence of the interviewer, compared to a human-conducted interview. As investigative interviews are high-stake situations, it could be that in these situations the difference between avatar and human is different than what we know about the difference between avatar and human so far from the current literature. By researching more about the interaction of suspects with avatars in investigative interviews and comparing them to human-conducted suspect interviews, a better understanding of whether avatars differ from humans in this specific setting will form. For now, this study provides us with the first indications that law enforcement does not necessarily need to restrict themselves to only using human-performed investigative interviews. Using avatars to perform investigative interviews, for at least small crimes, might very well be feasible.

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Appendices

Appendix A- Background story

Appendix B- Cover story

Appendix C- Pictures interview setup

Appendix D- Interviewing schemes

Appendix E- Questionnaire

Appendix F- Debriefing

Appendix A

Background story

Welcome to our study and thank you for participating. In this study, we are looking into the differences between suspect interviews performed by one or two interviewers. Each participant will get randomly assigned to either an interview performed by one interviewer or by two interviewers. In the following, you will receive a story about a crime and you have to imagine that you have committed that crime. After that, a video will be shown to you in which you see a suspect interview and we ask you to imagine that you are the suspect in question, so observe the video carefully. Finally, we ask you to fill out a questionnaire about the video you just saw.

In total, it will take you approximately 15-20 minutes to complete this study. This study is anonymous and you can withdraw from participation at any point without having to explain yourself. Your data will be stored safely and will only be shared between the researchers mentioned below. If you have any questions regarding the study, feel free to contact us at j.j.haagberg@student.utwente.nl and f.hamacher@student.utwente.nl. We are supervised by Miriam Oostinga (m.s.d.oostinga@utwente.nl) and Steven Watson (s.j.watson@utwente.nl). This study was approved by the Faculty of Behavioural, Management, and Social sciences Ethics Committee of the UT. If you have questions or any other concerns regarding the ethics of the study or your rights as a participant, please contact the ethics committee via ethicscommittee-bms@utwente.nl.

Once you have read the information above and you are willing to participate in this study under these conditions, you can click ‘next’ and the study begins.

Appendix B

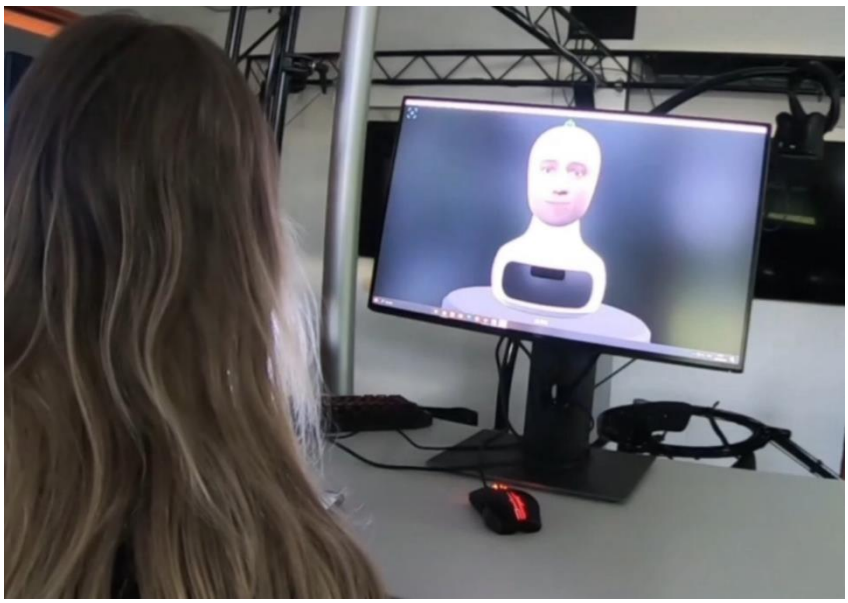
Cover story

We want to ask you to imagine that you are the person in the following story:
Your name is Alex Jackson and you are 31 years old. You worked 5 years as a postal office manager, but last month the company had to let you go due to financial issues. You live on your own in an apartment that is now too expensive to pay for. Today, you woke up in a bad mood and normally in order to get into a better mood you would go shopping for some new clothes. Due to your financial issues at the moment, you make a deal with yourself that you are not going to buy any new clothes, but you go to the store just to look and try on some clothes. When you are in your favorite store you see some clothes that are exactly what you are looking for, but they are too expensive. You decide to nevertheless take them with you, but without paying for them. There are a few other customers, so you try to sneak them into your bag as discrete and unsuspiciously as possible. Full of adrenaline you rush out of the mall and go home to do some work in the garden. Next thing you know, the police knocks at your door, because you are being suspected of shoplifting and you are asked to come to the station for an interview.

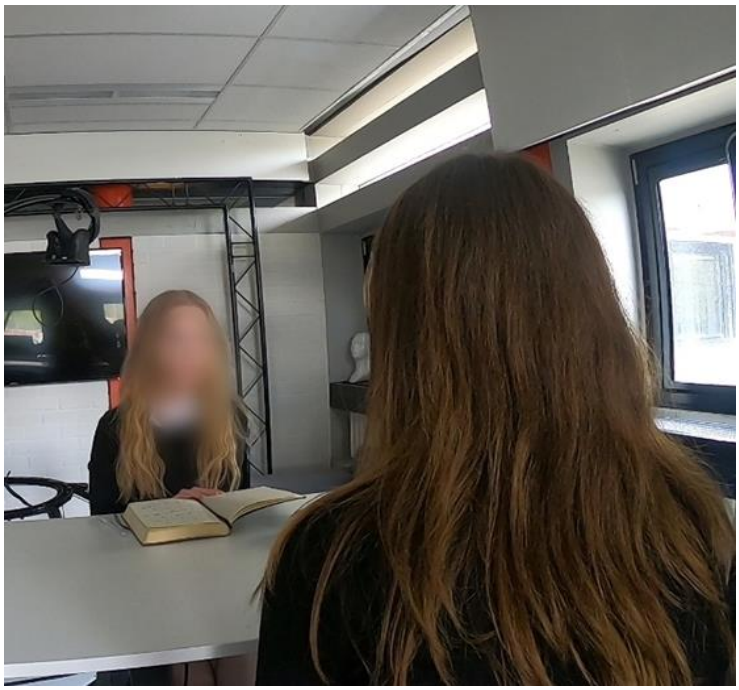
On the next page, we will show you a video of the suspect interview. You are in the group that will be interviewed by one interviewer. Please imagine that you are the person being interviewed.

Appendix C

Setup avatar-conducted interview



Setup human-conducted interview



Appendix D

Interview with error. *Interviewer:* Hello I am officer Williams and I will be conducting your interview today. Before we start, I want to talk to you about some ground rules and practical matters for this interview. This interview is being recorded, so we get an exact record of all that is being said. I will be interviewing you about the shoplifting in the mall, where some clothes were stolen. The main purpose of this interview is to obtain an as much detailed image of what happened as possible. It is important to not leave any information out of the story because I also want to hear your side of the story. Ok. Let us begin the interview with some general information.

Interviewer: What is your name and date of birth?

Suspect: My name is Alex Jackson and my date of birth is 25-03-1990

Interviewer: Where are you from?

Suspect: I am born and raised in Enschede

Interviewer: Have you been accused of a crime earlier in your life?

Suspect: No I have not.

Interviewer: Did you commit the crime you are accused of?

Suspect: No, I didn't do anything wrong

Interviewer: Can you tell me in as much details as possible what you did on the morning of the 18th of April?

Suspect: uuh, I was at home working in the garden.

Interviewer: Did you do anything else that morning?

Suspect: No, not that I recall.

Interviewer: We have video material of you in the mall at the 18th of April.

Suspect: Oh yes, I forgot. I was running some errands.

Interviewer: Can you tell me a bit more about that, did you pick up anything?

Suspect: No I couldn't find what I was looking for, it was sold out.

Interviewer: We have an eye-witness who saw you putting clothes in your bag and walking out of the store without paying for them.

Suspect: No, they must have mistaken me for someone else, because I didn't do that!

Interviewer: We also have the owner of the store confirming that you were behaving suspiciously.

Suspect: Okay, okay you are right, it was me, I stole something. I just got fired a few months ago and I have trouble paying for my rent. This made me feel really down, and usually when I

am feeling like that, I go shopping for clothes to get into a better mood.
Interviewer: So you stole the clothes for the thrill of it?
Suspect: Huh? No, I just told you, I stole it because I didn't have the money to pay for it and I wanted get into a better mood.
Interviewer: Okay, do you have anything to add, or do you have any questions?
Suspect: No
Interviewer: Ok. I believe I have enough information. I will contact you again in the near future to inform you about the procedure. Goodbye.

Interview without error. *Interviewer:* Hello I am officer Williams and I will be conducting your interview today. Before we start, I want to talk to you about some ground rules and practical matters for this interview. This interview is being recorded, so we get an exact record of all that is being said. I will be interviewing you about the shoplifting in the mall, where some clothes were stolen. The main purpose of this interview is to obtain an as much detailed image of what happened as possible. It is important to not leave any information out of the story because I also want to hear your side of the story. Ok. Let us begin the interview with some general information.
Interviewer: What is your name and date of birth?
Suspect: My name is Alex Jackson and my date of birth is 25-03-1990
Interviewer: Where are you from?
Suspect: I am born and raised in Enschede
Interviewer: Have you been accused of a crime earlier in your life?
Suspect: No I have not.
Interviewer: Did you commit the crime you are accused of?
Suspect: No, I didn't do anything wrong
Interviewer: Can you tell me in as much details as possible what you did in the morning of the 18th of April?
Suspect: uuh, I was at home working in the garden.
Interviewer: Did you do anything else that morning?
Suspect: No, not that I recall.
Interviewer: We have video material of you in the mall at the 18th of April.
Suspect: Oh yes, I forgot. I was running some errands.
Interviewer: Can you tell me a bit more about that, did you pick up anything?
Suspect: No I couldn't find what I was looking for, it was sold out.

Interviewer: We have an eye-witness who saw you putting clothes in your bag and walking out of the store without paying for them.
Suspect: No, they must have mistaken me for someone else, because I didn't do that!
Interviewer: We also have the owner of the store confirming that you were behaving suspiciously.
Suspect: Okay, okay you are right, it was me, I stole something. I just got fired a few months ago and I have trouble paying for my rent. This made me feel really down, and usually when I am feeling like that, I go shopping for clothes to get into a better mood.
Interviewer: So you stole the clothes because of financial issues?
Suspect: Yes, that is right
Interviewer: Okay, do you have anything to add, or do you have any questions?
Suspect: No
Interviewer: Ok. I believe I have enough information. I will contact you again in the near future to inform you about the procedure. Goodbye.

Appendix E

Questionnaire

Rapport. 5 strongly agree, 4 agree, 3 neutral, 2 disagree, 1 strongly disagree

You had to imagine that you were the one being interviewed. If you were to be the one that was interviewed, to what extent do you agree with the following statements?

I think the interviewer is generally honest with me

The interviewer did his/her job with skill during the interview

The interviewer respects my knowledge

The interviewer performed expertly during the interview

I think that the interviewer can generally be trusted to keep his/her word

The interviewer really listened to what I had to say

I was motivated to perform well during the interview

I feel I can trust the interviewer to keep his/her word to me

The interviewer made an effort to do a good job

The interviewer acted like a professional

The interviewer paid careful attention to my opinion

The interviewer and I got along well during the interview

The interviewer and I worked well together as a team

I wanted to do a good job during the interview

The interviewer was attentive to me

Communication went smoothly between the interviewer and me

The interviewer was interested in my point of view

I felt committed to accomplishing the goals of the interview

Willingness to share information. 1 Strongly disagree, 2 disagree, 3 somewhat disagree, 4 somewhat agree, 5 agree, 6 strongly agree

You had to imagine that you were the one being interviewed. If you were in that situation, would you:

-Tell the interviewer everything you know

-Give the interviewer a lot of information

-Give the interviewer truthful information

Trust. 1 Strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree

When you imagine that you were the one being interviewed, indicate to what extent you agree with the following statements:

1. The interviewer and I freely share our ideas and feelings.

2. The interviewer responds caringly when I share my problems.

3. I can talk freely to the interviewer about the problems I am having.

4. The interviewer approaches his/her job with dedication.

5. I see no reason to doubt the interviewers' competence for the job

6. If people knew more about the interviewer, they would be more concerned and monitor his/her performance more closely. (r)

Perceived communication competence. 5 strongly agree, 4 agree, 3 neutral, 2 disagree, 1 strongly disagree.

Keeping the interviewer in mind, to what extent do you agree with the following statements:

The interviewer can adapt to changing situations.

The interviewer treated me as an individual.

The interviewer interrupted me too much (r)

The interviewer is "rewarding" to talk to.

The interviewer can deal with others effectively.

The interviewer is a good listener.

The interviewer is easy to talk to.

The interviewer wouldn't argue with someone just to prove he/she is right.

The interviewers' conversation behavior is not "smooth." (r)

The interviewer ignored my feelings. (r)

The interviewer let me know he/she understands me

The interviewer is relaxed and comfortable when speaking.

The interviewer listens to what I say to him/her.

The interviewer generally knows what type of behavior is appropriate in any given situation.

The interviewer was an effective conversationalist.

The interviewer was supportive of me

The interviewer can easily put himself/herself in another person's shoes.

The interviewer paid attention to the conversation.

The interviewer was interested in what I had to say.

The interviewer did not follow the conversation very well. (r)

The interviewer is a likeable person.

The interviewer is flexible.

The interviewer is not afraid to speak with people in authority.

The interviewer generally says the right thing at the right time.

The interviewer likes to use his/her voice and body expressively.

The interviewer was sensitive to my needs at the moment.

Appendix F

Debriefing

In the beginning of this study, you were told that this study was meant to investigate the differences between interviews performed by either one or two interviewers, but this was actually not the case. In this study we investigate the differences between interviews being performed by an avatar or by a human. Next to that, we wanted to see the effect of this interviewer making a communication error. You were either in the group in which the interviewer made an error or not. This comparison is very interesting for the future because technology is progressing every day and we might see actual avatar-mediated interviews in this setting. We had to withhold this information in order to prevent biased answers. This would give us unreliable results. If you have any questions or concerns about this, feel free to contact us at f.hamacher@student.utwente.nl or j.j.haagberg@student.utwente.nl. Lastly, we want ask you to not tell any others that might participate in this study about the actual purpose and content of the study. Thank you for participating!