

**Examining the Effect of Procedural Information on Vulnerable Individuals’
Cooperation and Anxiety Levels within Investigative Interviews**

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Abstract

Investigative interviewing plays a crucial role in gathering evidence and solving crimes. However, they are usually aimed at neurotypical individuals. Research suggests that not every individual has the same needs when it comes to police interviews. Especially neurodiverse individuals face various problems when it comes to conventional policing techniques such as difficulties occurring when being interviewed with an open-ended questioning style. Neurodiversity includes a wide spectrum such as individuals with ADHD or autism. Since there are differences in what might work best for neurotypical and neurodiverse individuals, this research explored how providing procedural information prior to the interview affected the participants' cooperation and anxiety levels during the investigative interview. A structured online interview and an online survey were conducted. Participants were divided into two groups, one receiving procedural information and the other not. Results show that there was no effect of procedural information on cooperation and anxiety levels. An explorative analysis examined a small neurodiverse sample in comparison to neurotypical participants: although the findings were not significant, I could observe that cooperation levels increase in the procedural information group and anxiety levels decrease in comparison to the non-procedural group. Contrastingly, neurotypical participants tend to have higher anxiety levels and are less willing to cooperate when being provided with procedural information compared to receiving no procedural information. This might indicate that there are indeed individual differences when it comes to investigative interviewing as not every technique works for every individual. Concludingly, this research serves as the first starting point in improving investigative interviewing techniques for vulnerable individuals by giving insights that providing procedural information might be a useful technique for these citizens.

Table of contents

INTRODUCTION	4
VULNERABILITY.....	5
SUITABILITY OF CONVENTIONAL POLICING TECHNIQUES FOR NEURODIVERSE	
INDIVIDUALS.....	6
NEW MEASURES SUPPORTING VULNERABLE SUSPECTS AND WITNESSES	8
PRE-INTERVIEW INFORMATION TECHNIQUE	9
THE PRESENT RESEARCH.....	10
METHODS	11
PARTICIPANTS.....	11
MATERIALS.....	11
<i>Case Vignette</i>	<i>11</i>
<i>Measures</i>	<i>12</i>
DESIGN AND PROCEDURE	12
TEST OF HYPOTHESIS 1 (H1).....	14
TEST OF HYPOTHESIS 2 (H2).....	14
EXPLORATORY ANALYSIS	14
<i>General Comparison of Neurodiverse vs Neurotypical Participants</i>	<i>14</i>
<i>Comparison of Neurodiverse and Neurotypical Participants per Group.....</i>	<i>15</i>
DISCUSSION	16
MAIN FINDINGS.....	16
EXPLORATIVE ANALYSIS.....	20
STRENGTHS AND LIMITATIONS	21
CONCLUSION.....	23
REFERENCES.....	25
APPENDIX A	29
APPENDIX B.....	30
APPENDIX C	32
APPENDIX D	34
APPENDIX E.....	36
APPENDIX G.....	39
APPENDIX H.....	40
APPENDIX I.....	41
APPENDIX J.....	43
APPENDIX K.....	44

Examining the Effect of Procedural Information on Vulnerable Individuals' **Cooperation and Anxiety Levels within Investigative Interviews**

Investigative interviewing plays an essential role in police investigations and law enforcement. The gained information from investigative interviews often provides important leads in ongoing investigations and facilitates the generating of substantial evidence (Vrij et al., 2014). To gather evidence that is credible, accurate as well as legally admissible, the police make use of various investigative interviewing techniques such as the humanitarian interview model (Smets, 2012). The humanitarian model can be characterised by a personalised and empathetic approach towards the suspect or witness, which should establish good rapport and cooperation (Vanderhallen et al., 2011). Rapport can be defined as the establishment of a positive relationship between interviewer and interviewee (Matthews & Matthews, 2006, as cited in Vanderhallen et al., 2011, p.122). In investigative interviewing, rapport facilitates an accepting and respecting atmosphere between interviewer and interviewee, leading to good communication (Powell et al., 2015).

As an example of the humanitarian interviewing model, one can describe the PEACE framework which is commonly used in Europe. This five-staged model was designed to encourage police officers to interview suspects open-mindedly and ethically. The approach was also created to improve the quality and quantity of the information acquired by the interviewee. The first stage of this model refers to the planning and preparation prior to the actual interview. Interviewers are advised to gather all the necessary information about the upcoming interview, such as familiarising themselves with the case and preparing suitable questions. The following two stages are the engage and explain stage and the account stage. Within the account stage, the interviewer encourages the interviewee to provide as much information as possible (Shawyer et al., 2013). Lastly, the last two stages are called the closure stage and evaluation stage, in which the interview is coming to an end, and the interviewer summarises the interview to confirm once again the gathered information. Furthermore, the interviewer has the chance to evaluate all the gained information in light of the interrogation (Shawyer et al., 2013).

However, besides the standard interviewing models such as the PEACE model, there is a lack of recommendations for vulnerable citizens who might need special attention when wanting to ensure low anxiety and cooperation levels within the investigative interview. Furthermore, common interview models, such as the PEACE framework, only provide guidelines and tactics on how to deal with the interviewee during the interview. Nevertheless, when dealing with vulnerable individuals, it might be helpful to use specific interview

techniques before the interview even begins, such as providing procedural information. This may be beneficial as it might put the interviewee at ease in advance and improve the interview outcome quality.

Therefore, this research focuses on improving interviewing techniques, especially for vulnerable individuals by providing the individuals with procedural information. Specifically, this paper aims to investigate if the interviewing technique of giving the interviewee procedural information before the interview will increase the interviewees' willingness to cooperate and decrease the overall anxiety levels within the interview. In this study procedural information consists of a flyer with information about the upcoming police interview which the interviewee receives 24 hours prior to the interview. Furthermore, the procedural information also includes information about the interviewees' rights, the aim and length of the interview as well as the overall rules.

Vulnerability

To ensure the interview quality, it is important to identify such vulnerable individuals and adapt policing techniques to their specific needs. To be more precise, Gudjonsson (2010, p.166) defines psychological vulnerabilities as “psychological characteristics or mental state which render a witness prone, in certain circumstances, to providing information, which is inaccurate, unreliable or misleading”. Even though this definition is focussing on witnesses, it is also translatable to vulnerable suspects.

Vulnerability includes a wide range of disorders and mental illnesses. Gudjonsson (2010) divided psychological vulnerabilities into four different categories. The first category is the “mental disorders”, for example, individuals with learning disabilities, mental illnesses, or personality disorders. The second category is described as the “abnormal mental states”, which includes individuals with, for example, phobias, high anxiety levels, mood disturbances, feelings of bereavement and intoxication problems. Thirdly, the category “intellectual functioning” describes individuals with, for example, borderline IQ scores. The fourth category is the “personality” category, which is defined by high suggestibility, compliance and acquiescence (Gudjonsson, 2010).

In the context of police interrogations, it is suggested that specific psychological vulnerabilities are at high risk of getting in contact with the police as a cause of their disorders. Specifically, attention-deficit hyperactivity disorder (ADHD) is highly associated with an increased risk of recidivist offending. When looking at the adult offender population, individuals with ADHD are more represented than individuals without ADHD (Gudjonsson et al., 2007).

In general, it can be said that participating in an investigative interview can be perceived as stressful for the interviewee (Herrington & Roberts, 2012). Therefore, it is of great importance to use adequate interview techniques to make the interviewee feel more comfortable (Ministry of Justice, 2022). Furthermore, as a result of high offender rates with psychological vulnerabilities and various prejudices concerning those, it is necessary to consider conventional policing techniques and how well vulnerable people are responding to them.

Suitability of conventional policing techniques for neurodiverse individuals

In general, people with psychological vulnerabilities face various problems during the interview. Specifically, language deficits resulting in poor language skills, such as the usage of odd, biased, and unusual language, make it more difficult for police officers to understand and interpret the responses of vulnerable individuals correctly (Herrington & Roberts, 2012).

In addition, issues that arise from asking specific types of questions can also have serious consequences (Farrugia & Gabbert, 2020a). Conventional interviewing techniques often make use of an open-ended questioning style. Open questions are said to be best to give the interviewee the feeling of being able to freely elaborate on their experiences and thoughts (Powell et al., 2005). Even though an open questioning style is widely recommended for investigative interviews, it is argued that especially those questions might be too challenging for vulnerable interviewees. Open questions rely on episodic memory, which is a type of memory concerning the recall of personal experiences that includes the details about what occurred as well as where and when it occurred (Tulving, 1993). Moreover, making use of episodic memory requires a high attentional level and cognitive control from the interviewee. However, interviewees with mental illnesses are more likely to suffer from cognitive deficits in these areas, which are essential for a free recall when being asked open questions. Concludingly, the widely used technique of asking open questions can be perceived as an obstacle for vulnerable interviewees and raise difficulties in responding correctly to the interviewer (Farrugia & Gabbert, 2020a).

Besides looking at difficulties with specific questioning styles, another factor obstructing the communication within the investigative interview could be the vulnerable interviewees' high anxiety levels (Herrington & Roberts, 2012). Investigative interviewing can be perceived as incredibly overwhelming for vulnerable individuals, which can lead to difficulties in remaining focused and answering the questions coherently and correctly (Herrington & Roberts, 2012).

It is also important to consider if vulnerable individuals understand their legal rights in an investigative interview. The presentation of legal rights before an investigative interview is a common element of conventional interviewing techniques (Eastwood et al., 2014). Even though legal rights might be explained, vulnerable individuals sometimes lack the capacity to fully understand the consequences of their statements. This can, for example, lead to confessing to a crime just to get out of the uncomfortable interview situation or falsely believing that their innocence is clear to the interviewer and a confession is not binding (Herrington & Roberts, 2012).

Furthermore, the misunderstanding of legal rights by vulnerable individuals is also closely linked to the willingness to cooperate in an investigative interview. Specifically, cooperation can be linked to rapport because the better the relationship between interviewer and interviewee, the more respected and fairly treated the interviewee feels. This, in turn, leads to more cooperation during the police interview (Farrugia & Gabbert, 2020b). However, to feel this way, it is crucial to understand the process and rules of the interview thoroughly. Since, as described above, the understanding of legal rights might be limited, it may become more challenging to establish this vital relationship between interviewer and interviewee which should facilitate cooperation. Consequently, to ensure better cooperation, an adaption of questioning styles for vulnerable interviewees is in great need (Farrugia & Gabbert, 2020b).

After reviewing the common problems vulnerable people face with conventional policing techniques, one must consider and identify the various negative effects resulting from those. According to Redlich et al. (2011), there is an overrepresentation of false confessions among suspects with mental health issues or cognitive impairments. Next, due to inappropriate questioning styles, approximately 30% of vulnerable witnesses' information is wrong (Bull, 2010). This higher risk of receiving false confessions and information from vulnerable individuals can make the solving of crimes more difficult.

In addition, misleading policing techniques are also leading to high anxiety and stress levels. Since struggling vulnerable interviewees might perform poorly during the interview, police officers might respond frustrated. Hence, the interviewee may be intimidated not only by the situation within the interview itself but also by the police officer's perhaps frustrating behaviour (Herrington & Roberts, 2012).

Concludingly, one can argue that those various negative effects need to be addressed when adapting conventional policing techniques. This can be done by investigating if procedural information might be effective for some of the aforementioned problems.

Providing the interviewee with procedural information might increase their overall understanding of legal rights, and consequently their cooperation levels. In addition, since police interviews can be perceived as overwhelming and therefore leading to high anxiety levels, the procedural information might help in giving the interviewee a sense of security and preparation in advance.

New Measures Supporting Vulnerable Suspects and Witnesses

Since aforementioned risk factors concerning vulnerable individuals participating in investigative interviews were identifiable, it is necessary to analyse what measures were already taken to improve the conventional interview techniques. First, one must mention the *Achieving Best Evidence in Criminal Proceedings: Guidance on Interviewing Victims and Witnesses, and Guidance on Using Special Measures* (short: ABE approach). This approach was specifically designed to assist vulnerable witnesses and victims during the gathering of evidence (Ministry of Justice, 2022). Police officers are specifically trained to adapt to the vulnerable witnesses' needs and are eligible to make use of special measures designed for helping the witnesses, such as using special communication aids or communicating through intermediaries. Additionally, the ABE model also suggests including a clear presentation of the ground rules of the interview before the questioning of the vulnerable individual in order to make the interviewee feel more comfortable. It is argued that vulnerable individuals usually tend to be afraid of the unknown, by explaining the ground rules and the interview process to them, anxiety is said to be reduced. Furthermore, this approach has made significant progress through the years to ensure a fair and, importantly, safe interrogational process and protect those vulnerable witnesses (Ministry of Justice, 2022).

However, since this approach exclusively focuses on vulnerable witnesses and this research examines especially the vulnerable suspects, it is also necessary to investigate if similar measures can be found for this group. Mentionable here is the “*Guidance on Responding to people with mental ill health or learning disabilities*” produced by the Association of Chief Police Officers (2010). Similarly to the ABE approach, this guidance focuses on victims and witnesses but also interestingly on vulnerable suspects. One of the goals of this approach is to overcome discrimination and stigma against vulnerable individuals to ensure a fair and transparent process within the interrogations. Furthermore, this guide points out the importance of correctly identifying the individuals' psychological vulnerabilities and, consequently, their special needs (Association of Chief Police Officers, 2010). Another aspect the guidelines highlight is the importance of good communication. Police officers are advised to clearly present the suspects' rights and ensure that the

interviewee is provided with enough information (Association of Chief Police Officers, 2010). Even though this approach addresses important and necessary points, Herrington and Roberts (2012) criticised that besides suggesting good strategies, the approach does not help police officers to actively identify vulnerable individuals. Accordingly, the approach lacks information on how to actually interview the vulnerable interviewee and what methods are best to use (Herrington & Roberts, 2012).

Considering this criticism and the fact that the ABE approach is mainly focused on vulnerable witnesses, it can be argued that more specific methods and techniques must be investigated to ensure the appropriate handling of vulnerable suspects. In particular, it might be important to investigate whether the vulnerable suspects can also benefit from the same technique mentioned in the ABE approach for communicating the ground rules to vulnerable witnesses to reduce fear. This might be achievable by incorporating procedural information before the investigative interviews to reduce the feared uncertainties.

Pre-interview Information Technique

As mentioned above, one technique that could help vulnerable suspects is providing detailed information about the investigative interview process and a detailed explanation of the suspects' legal rights. Informing the interviewee properly about their legal rights plays a crucial role in investigative interviews. Therefore, at the beginning of each interview, police officers are responsible for explaining those to the interviewee. Even though police officers are obliged to inform the interviewee, it leaves the question if the suspects actually understand the explanation of the legal rights. Hence, Eastwood et al. (2014) investigated to what extent individuals actually gained an understanding of their legal rights and identified improvements to simplify this process. Many individuals struggle with fully understanding their rights due to the complex and fast presentation of those. To improve the overall understanding of the interviewees' legal rights, research suggests simplifying the language when presenting the pre-information and taking enough pauses in which, the police officer reassures that the legal understanding was obtained. Prove was found that simplifying and breaking the information into smaller sections increased comprehension among individuals. In addition to increased comprehension, individuals were also better prepared for the upcoming interview, which arguable can decrease stress and uncertainty for the individual, ensuring better focus while being interviewed (Eastwood et al., 2014).

Considering that vulnerable individuals are even more at risk of misunderstanding their legal rights as well as encountering general problems when being interviewed, it is crucial to determine if the pre-interview technique of providing detailed procedural

information prior to the interview and right at the beginning of the interview might be effective.

The Present Research

It can be argued that it is of great importance to use appropriate interviewing techniques when dealing with psychologically vulnerable individuals. Considering the existing research gap of working policing techniques for such individuals, this research aims to test an adapted interview technique (pre-interview information technique) and its appropriateness for vulnerable suspects. Specifically, this study will explore the relationship between providing pre-interview information such as clearly presented procedural information and the participants' anxiety and cooperation levels. This technique will be focused and tested on neurotypical individuals and can therefore be said to give a starting point for future research concerning vulnerable citizens. Consequently, this research wishes to determine the following research questions:

1. Can pre-interview information such as clearly presented procedural information help increase the interviewees' willingness to cooperate in an investigative interview?
2. Can pre-interview information such as clearly presented procedural information help to reduce the interviewees' potential anxiety after the interview?

Furthermore, the research questions have two linking hypotheses. It can be assumed that the level of rapport will likely be higher in the procedural information group than in the no-procedural information group, and high levels of rapport are argued to lead to high levels of cooperation (Powell et al., 2005). Rapport will likely be higher, as rapport can only be achieved if the individual feels respected and treated fairly. This, however, can only be established if the individual fully understands the process of the interview as well as their legal rights (Farrugia & Gabbert, 2020b). As a cause of providing individuals in the procedural information group with extra information, the understanding of the interview procedure and their legal rights should be higher compared to the no-procedural information group, leading to good levels of rapport and, therefore, high levels of cooperation. Therefore, it can be hypothesized that cooperation will be higher in the procedural information group compared to the no-procedural information group.

Regarding the second research question, it can be assumed that the understanding of legal rights should be higher in the procedural information group. Vulnerable individuals usually tend to fear uncertainties (Ministry of Justice, 2022). Being able to understand the presented legal rights as well as the procedure of the upcoming interview is therefore argued to reduce stress and uncertainty before the interview, leading to low anxiety levels (Eastwood

et al., 2014). Consequently, the second hypothesis states that anxiety levels will be lower in the procedural information group compared to the no-procedural information group.

Methods

Participants

In total, 64 participants volunteered their time for the study. However, one participant had to be excluded due to more than 90% of missing data, and another participant had to be excluded because of not participating in the interview. Participants were gathered through the SONA system of the University of Twente and via social media platforms such as WhatsApp and Instagram. The SONA system is a subject pool system in which students from the University of Twente can share and participate in studies. In exchange for their participation, students receive credit points, for this study students gained one credit point for participation.

Furthermore, a total of 62 participants fulfilled all the necessary criteria for participating in the interview and answering the questionnaire. The sample was divided into two groups, the no-procedural information group with 32 participants and the procedural information group with 30 participants. This was done randomly by switching groups for each day of the interviews.

Moreover, 37 participants were female ($M_{age} = 21.73$, $SD = 1.69$) and 24 participants were male ($M_{age} = 23.71$, $SD = 5.17$). One participant did not want to indicate their gender. Seven participants indicated identifying as neurodiverse: 4 (6.45%) participants were (self-) diagnosed with ADHD, and 3 (4.84%) indicated being (self-)diagnosed with dyslexia. Only one participant decided to not indicate whether they were neurodiverse. Moreover, this study was approved by the BMS ethics committee of the University of Twente.

Materials

This research paper was part of a broader study. Therefore, only the case vignette, the State-Trait Anxiety Inventory and the measure for cooperation were included and used for the analysis. However, the broader research also consisted of a coding scheme for truthful information created by Weiher, (2020), (see Appendix A), the Rapport scale for interrogations and investigative interviews developed by Duke et al. (2018), (see Appendix B), and the Bond-scale of the Working Alliance Inventory (WAI) by Vanderhallen et al. (2011), (see Appendix C).

Case Vignette

In order to give participants an experience they could later recall in the interview and additionally load the participants with guilt so they could take part as a suspect, the research

used a case vignette (Weiher, 2020). The presented case vignette describes a scenario about a theft on a military base. The participant is instructed to imagine themselves smuggling military equipment out of the military base. The participant is provided with a clear description of smuggling ways and routes. This information was included to give the participants something to report during the interview. Furthermore, the scenario displays worrying thoughts which the participants should imagine. The participant is advised to give enough information to have the possibility to get protection from the police but not too much information as this is described to be possibly dangerous for themselves and their own family (see Appendix D).

Measures

State-Trait Anxiety Inventory. To assess participants' anxiety levels, the state-anxiety scale of the State-Trait Anxiety Inventory (STAI) developed by Spielberger et al. (1983) was used (see Appendix E). The scale was developed to measure state anxiety, meaning the participants' anxiety level at the exact moment.

Since the anxiety levels of the participant directly after the interview were of great importance for the analysis, this scale was chosen to be included. The scale consists of 20 statements measured on a four point-Likert scale ranging from 1= "not at all" to 4 = "very much so". Statements were, for example, "I feel steady" and "I feel calm". Higher scores on the scale mean higher anxiety levels in the participants. In this study, the Cronbach's alpha was 0.93. According to Taber (2018), Cronbach's alpha values of 0.93-0.94 can be described as excellent. Therefore, the internal reliability in this study was found to be excellent.

Cooperation: Word Count. The word count was collected to measure each participant's willingness to cooperate. The word count indicated how much the interviewee talked during the interview and provided insights about the cooperation levels. The more the participant provided, the higher the cooperation level.

Design and Procedure

A between-group design with two conditions (no-procedural information vs procedural information) was employed. Therefore, the independent variable was procedural information. The first dependent variable was the willingness to cooperate of the participants, and the second dependent variable was the level of anxiety measured after the interview.

After signing into the study via Sona System, participants were able to pick a date and time for the interview. In order to hide the study's true purpose, and to ensure participants were unbiased, participants were told that the study would be about lie detection in

investigative police interviews. Next, 24 hours prior to the interview, the participants received an information email including the case vignette and informed consent (see Appendix F). Additionally, participants assigned to the procedural information group received procedural information in form of a flyer (see Appendix G). The flyer consisted of an explanation of what a voluntary police interview is and a detailed overview of the whole interview process. Moreover, participants were asked to familiarise themselves with the information before the interview. Next, the participants and the researcher met at the agreed time via Microsoft Teams. After receiving consent from the participant, the interview began with different introductions depending on the group. In general, in both groups, the participants received an introduction in line with the Engage and Explain phase of the PEACE model (Shawyer et al., 2013), such as an explanation of the purpose of the interview and that they are allowed to have legal representation during the police interview. Furthermore, in the no-procedural information group, participants also received a description of their legal rights. Procedural information contained extra information about the duration of the interview as well as who will be present during the interview. In addition, participants in the procedural information group were informed that the interview is voluntary and aimed to collect information about the equipment theft. Next, the procedural information also included the legal rights that the interviewee can remain silent and that everything they say can be used against them in front of court.

The interview continued by following a prepared interview guide (see Appendix H and I). The structured interview questions were the same for each group and followed a funnel structure by starting open “Please tell me in as much detail as possible everything that you know about the smuggling” and closing down by asking, “What else can you tell me about the smuggling”. Each interview took approximately 5-10 minutes. After the interview, participants were informed about which group they were assigned to and received the follow-up questionnaire. After repeating the informed consent after the interview, participants were asked to indicate their assigned condition. This was done to be able to differentiate the survey responses per group.

After that, the participants were able to fill in the provided scales, starting with the state-anxiety scale (Spielberger et al., 1983), followed by the rapport scale for interrogations and investigative interviews (RS3i) by Duke et al., (2018), and the WAI (Vanderhallen et al., 2011). Additionally, although it was not part of the analysis, the participants had to indicate whether they would return to a more in-depth interview, if they would want legal representation during any such interview and how motivated they were to participate in this

study (see Appendix J). Lastly, participants were asked to indicate their motivation to participate in this study, followed by questions relating to their demographic background, such as age, gender and whether they identified as neurodiverse (diagnosed or self-diagnosed). The questionnaire ended with a debrief in which the participants were informed about the real purpose of the research and the manipulation of each group (see Appendix K).

Results

Time Interview

In general, the mean duration for all the interviews was 5 minutes and 59 seconds ($Min = 3$ minutes 31 seconds, $Max = 11$ minutes). In the no-procedural information group the mean duration was 5 minutes and 45 seconds ($Min = 3$ minutes 31 seconds, $Max = 11$ minutes) and in the procedural information group 5 minutes and 59 seconds ($Min = 4$ minutes 28 seconds, $Max = 9$ minutes 56 seconds).

Test of Hypothesis 1 (H1)

The first hypothesis that cooperation levels are higher in the procedural information group than in the no-procedural information group was tested with an independent-samples t-test. In general, cooperation levels were higher in the no-procedural information group ($M = 414.41$, $SD = 225.80$) than in procedural information group ($M = 375.37$, $SD = 172.14$). However, the difference was statistically not significant, $t(60) = 0.76$, $p = .449$, $d = 0.19$. Therefore, the results suggest that procedural information does not affect the cooperation levels. Thus, the first hypothesis (H1) must be rejected.

Test of Hypothesis 2 (H2)

The second hypothesis (H2), that anxiety levels should be lower in the procedural information group than in the no-procedural information group, was checked with an independent-samples t-test. State anxiety was lower in the no-procedural information group ($M = 2.09$, $SD = 0.50$) than in the procedural information group ($M = 2.20$, $SD = 0.62$). However, no statistically significant difference was detectable, $t(60) = -0.82$, $p = .417$, $d = 0.2$. Meaning that procedural information has no effect on the anxiety levels. Concludingly, H2 must be rejected.

Exploratory Analysis

General Comparison of Neurodiverse vs Neurotypical Participants

Descriptive statistics were conducted to get an overview of how neurodiverse participants differ in comparison to neurotypical participants (Table 1). Therefore, 7 neurotypical participants were randomly sub-sampled from the overall sample to match the

sample size of the neurodiverse individuals. However, the sample size was too small to conduct any statistical tests, so no statistical assumptions can be made.

Table 1

Descriptive Statistics Comparison of Neurodiverse and Neurotypical Participants

Variable	Neurodiverse				Neurotypical			
	N	Min-Max	Mean	Std. Deviation	N	Min-Max	Mean	Std. Deviation
STAI	7	1.15-2.70	2.02	0.53	7	1.45-2.65	1.99	0.41
Word count	7	108-408	321.29	104.31	7	237-765	478.57	196.98

Comparison of Neurodiverse and Neurotypical Participants per Group

To get an impression of how cooperation and anxiety levels of neurodiverse and neurotypical participants differ per group, descriptive statistics were employed. Table 2 provides an overview of the descriptive statistics of the neurodiverse and neurotypical samples for each group.

For the descriptive statistics of the neurodiverse sample, we can see that the word count was higher in the procedural information condition compared to the no-procedural information condition. Additionally, the STAI scores were lower in the procedural information group. For the neurotypical sub-sample, these scores were reversed, meaning higher word count in the no-procedural condition and lower STAI scores for this group compared to the procedural information group scores.

Table 2*Descriptive Statistics of Neurodiverse and Neurotypical Participants per Group*

Variable	Neurodiverse		Neurotypical	
	No-procedural information group (N = 4)	Procedural information group (N = 3)	No-procedural information group (N = 4)	Procedural information group (N = 3)
Word count	M= 319 SD=141.62	M=324.33 SD=50.30	M=538.75 SD=245.09	M=398.33 SD=96.93
STAI	M=2.18 SD=0.52	M=1.82 SD=0.58	M=1.94 SD=0.26	M=2.07 SD=0.60

Discussion

In police interrogations, investigative interviewing is critical to gather accurate evidence (Vrij et al., 2014). However, it needs to be considered that not every technique works for every individual. Especially, the suitability of some conventional interviewing techniques, such as for example the open-ended questioning style, is questionable for vulnerable citizens.

Therefore, this research aimed to investigate a specific interviewing technique, procedural information, and its usefulness regarding the interviewees' anxiety and cooperation levels. Procedural information includes, for example, providing the interviewee with important information about the process and the aim of the interview prior to the interview and a detailed explanation of legal rights and rules right at the beginning of the interview.

Main Findings

The aim of this study was to answer the first research question if procedural information can increase the interviewees' willingness to cooperate within the investigative interview. Moreover, it was hypothesised that the group receiving procedural information prior to the interview would have increased and, therefore, higher cooperation levels than participants receiving no procedural information. However, the findings of the study suggest that there is no difference between the two groups, as no statistically significant result was

found. Therefore, procedural information seems to have no effect on the interviewees' willingness to cooperate within the interview. Even though a different effect was expected, a possible explanation to describe the present results can be presented. It can be discussed that cooperation levels did not increase with procedural information as rapport also did not increase. It was argued that the more information an individual receives, the more rapport can be achieved within the interview. Moreover, high rapport levels are positively linked to cooperation levels (Farrugia & Gabbert, 2020b). In specific, according to Abbe and Brandon (2013), rapport helps with gathering information from the interviewee and therefore facilitates cooperation. Consequently, high rapport levels in the procedural information group should have led to high cooperation levels.

Since this research paper was part of a bigger research project, another researcher investigated if procedural information induces higher levels of rapport in interviewees during an investigative interview (Lauber, in prep.). This research was conducted in the exact same way as the present study, with the same sample but with focussing on different dependent variables. Lauber (in prep.) did not find a statistically significant difference in rapport levels between the no-procedural information group and the procedural information group. Consequently, since procedural information did not influence rapport levels in this research, there was also no significant effect on cooperation levels.

Furthermore, another explanation for procedural information possibly not affecting the cooperation levels of the interviewees could be the questioning style of the interviews. The interviewees assigned to the no-procedural information group as well as the procedural information group were asked the same kind of questions. In general, the interview questions were designed to be in line with the information-gathering approach. The information-gathering approach can be characterized by aiming to gather information from the interviewee rather than pressuring a confession (Miller et al., 2018). The interview questions in this study were designed in a similar way. Questions mostly concerned getting information from the interviewee about possible smuggling routes or information about the smuggling ring, rather than directly confronting the interviewee to confess their involvement. According to Goodman-Delahunty et al. (2014), the investigative interviews designed in an information-gathering manner were generally connected to a higher willingness to cooperate from the interviewee. Taking into account that both groups in this study were asked the same kind of questions, which are said to be designed as information-gathering, this could have led to similar cooperation levels in both groups which can be assumed to be generally high.

Consequently, it could be that procedural information did not make a difference regarding the already similar cooperation levels.

In addition, one can mention another possible explanation for the results. One can assume that the performed manipulations were not strong enough to make a difference in the cooperation levels of the participants. Both groups received an explanation of their legal rights right before the interview. However, in the procedural information group, participants also received a flyer prior to the beginning of the interview. Nevertheless, it was not possible to check if the participants engaged with the flyer before the interview. Therefore, it could have happened that participants did not read the procedural information before the interview. Moreover, the presentation of the legal rights right before the questioning of the interviewee differed only slightly. In specific, the no-procedural information group, as well as the procedural information group, were presented with an overview of rights, the only difference regarding this presentation were some additional sentences. An example of extra information in the procedural information group is that the interviewer introduced themselves and stated that the interview is entirely voluntary. Despite the fact that the procedural information group received this extra information, the possibility that participants did not engage with the flyer in advance and the small difference in the manipulation of the presentation could have led to similar cooperation levels in both groups.

Since it might have been that the presented procedural information were not enough to make a difference in the interviewees' cooperation levels, due to participants possibly not engaging with the flyer or a too small difference between the two groups, future research should consider adapting the manipulation. Future research could for example consider providing the interviewee with the procedural information flyer in an observable setting. By doing this, the researchers could make sure that the flyer is read in advance of the interview. Moreover, future research could also consider adapting the procedural information within the interview in order to create a larger difference between the group receiving procedural information and the group without this extra information.

The second aim of this study was to investigate and answer the research question of whether the providing of procedural information decreases the interviewees' anxiety levels within the investigative interview. Even though it was hypothesised that the group receiving procedural information should have lower anxiety levels compared to the no-procedural information group, no statistically significant difference was found. Therefore, procedural information might not have an effect on the anxiety levels of the participants. The first possible explanation for this result could be that anxiety levels in both groups were generally

lower. These low levels can be explained by conducting the interview online. The environment in which a police interview is conducted can be said to be important. In a study conducted by Hoogesteyn (2019), it was investigated if the environment in which an interviewee participates in a police interview influences how much information an interviewee is willing to disclose and if it has an effect on rapport building. Furthermore, Hoogesteyn (2019) argued that the environment in which a police interview takes place can cause feelings of discomfort or can help the interviewee to relax. The police interviews in this study were conducted online, in an environment which was chosen by the interviewee. Moreover, one can argue that the possibly comfortable atmosphere and environment in which the interview was conducted led to those lower anxiety levels. Consequently, one may say that since the interview did not elicit high anxiety levels in the participant in the first place, accordingly, the assigned group did not make a difference.

Future studies should consider changing the interview setting. Accordingly, future investigative interviews should be conducted in a more formal environment with physical face-to-face interactions. This can ensure a more realistic simulation of the police interview which might elicit more accurate feelings in the interviewee.

Secondly, another possible explanation for not finding the effect of procedural information on the participants' anxiety levels can be described. The used interview styles in both groups can be linked to already lower anxiety levels of the participants. The humanitarian interview style can be argued to reduce the anxiety levels of the interviewee, as also investigated by Madsen and Holmberg (2015). In specific, Madsen and Holmberg (2015) researched if using the humanitarian rapport interview style influences interviewees' anxiety levels compared to using a non-rapport interview style. Specifically, in the humanitarian rapport interview style, the interview was conducted in a calm and friendly manner. Furthermore, this style was characterised by engaging positively and being cooperative with the interviewee. In contrast, in the non-rapport interview style, the interviewer acted aggressively and impatient, with an overall negative attitude towards the interviewee (Madsen & Holmberg, 2015). Concludingly, the findings of the study conducted by Madsen and Homberg (2015), suggest that there is a significant effect of interview styles on interviewees' anxiety levels. Besides, the anxiety levels in the humanitarian interview conditions were generally lower than in the other condition (Madsen & Homberg, 2015). In the present study, both interview guides and introductions were designed according to the Engage and Explain phase of the PEACE model, which can be described as a humanitarian interview guide. Consequently, one might argue that since both groups in this study were interviewed in a

humanitarian interview style, which is described as an interview-style reducing anxiety (Madsen & Holmberg, 2015), the anxiety levels were generally low, and the procedural information made no difference.

Explorative Analysis

Besides the main analysis, an explorative analysis was performed to investigate the neurodiverse participants regarding possible differences compared to the neurotypical participants' anxiety and cooperation levels per group. Interestingly, the scores of the neurodiverse sample differed in comparison to the sub-sampled neurotypical participants. Specifically, neurodiverse participants had lower anxiety levels and higher cooperation levels in the procedural interview group than in the no-procedural information group. These results are in line with the two hypotheses (H1 and H2). However, since there was a too small sample size for neurodiverse participants, these results can only be seen as a trend. Moreover, even though the cooperation levels in the procedural information group seem to be higher compared to the no-procedural information group, the difference in the word counts was very small. Therefore, this finding will not be discussed in detail.

Nevertheless, the first tendency, that procedural information may influence anxiety levels for neurodiverse participants, can be discussed. The trend of lower anxiety levels when presented with procedural information could be explainable by a better understanding of legal rights. It was discussed that especially vulnerable individuals generally struggle a lot with understanding their legal rights which is linked to high anxiety levels (Eastwood et al., 2014). Therefore, more information in the procedural information group may have led to better understanding and therefore fewer anxiety levels.

Contrastingly, the sub-sample of neurotypical participants showed reversed scores. Here, anxiety levels were lower and cooperation levels were higher in the no-procedural information group compared to the procedural information group. Even though the sample size was too small, one can discuss possible explanations for this trend. Regarding the anxiety levels of the neurotypical sub-sample, one might argue that due to receiving more information in the procedural information group, the neurotypical participants could have taken the interview more seriously. Thus, neurotypical participants might have been more aware of the possible consequences of the interview, which might have led to lower cooperation levels. Furthermore, it could also have been overwhelming for the neurotypical interviewees to receive such a long introduction from the interviewer in the procedural information group prior to the interview. Concludingly, this could also have led to higher anxiety scores in the procedural information condition.

Lastly, one can discuss that there was a possible mutual influence between anxiety and cooperation levels. One can hypothesize that since there was a trend for higher anxiety levels in the procedural information group for neurotypical individuals, this could have led to the lower cooperation levels in this group. Similarly, less anxiety in the no-procedural information group could have led to higher cooperation levels. Clark and Wells (1995, as cited in Kieckhaefer et al., 2014, p. 1013) argued that individuals who experience a lot of anxiety in a specific situation, have more problems with engaging in tasks that are cognitive demanding. Those cognitive demanding tasks could be for example the answering of questions within an investigative interview. Considering this, one can say that the trend of higher anxiety levels in the procedural information group might have influenced the cooperation levels of the participants.

Concludingly, the different scores in the two samples might also be explainable by mentioning that the study was designed to investigate interviewing techniques and their usefulness for vulnerable citizens. However, the study sample mainly included neurotypical individuals who may have different needs in investigative interviews. Besides that, one must keep in mind that in order to check these possible explanations for the results, additional research has to be done. It is also important to consider that procedural information might be disadvantageous for the neurotypical interviewees since a trend of higher anxiety levels and lower cooperation levels with the procedural information was observable. Therefore, considering to only make use of the procedural information technique for neurodiverse interviewees and toning it down or leaving it completely out for the neurotypical interviewees might be the most effective regarding the discussed findings.

Strengths and Limitations

Besides the main findings of this research paper, one must acknowledge relevant limitations. The research was not able to make sufficient statements for neurodiverse individuals, as only 7 participants were (self-)diagnosed with existing neurodiversity such as ADHD or dyslexia. Therefore, due to the small sample size, no statistical analysis could be performed, and the results can only be seen as the first starting point regarding neurodiversity in investigative interviews.

Even though in this study it was decided to not screen for neurodiversity in the participants because of assessment time and as a reason of aiming to improve interviews for neurodiverse and neurotypicals, future research might consider including a relevant screening. The undetected number of individuals being diagnosed with neurodiversity can be argued to be high, especially in women. According to Waite (2007), approximately 4 million women

would be assessed as having undiscovered ADHD. This high prevalence suggests that screening participants regarding whether they are on the spectrum, would be beneficial and contribute to a sufficient sample size and a more meaningful sample. Nevertheless, future research also needs to take into account that it might be ethically difficult to detect a neurodiversity in participants and then be obliged to inform them about it. Therefore, it is of great importance that future research is aware of the ethical concerns of screening their samples and take specific precautions for this problem. This could be done by for example including a clinical professional who is able to provide support to the participants when being informed about the neurodiversity.

In addition, since cooperation was only measured by how much the participant said within the interview, it was not possible to determine a baseline regarding whether cooperation was high or low in general. Even though it can be assumed that cooperation levels were generally higher as a reason for asking questions in line with the information-gathering approach, it was only possible to compare the individual word counts with each other. However, it would have been interesting to compare the scores to a baseline to be able to make definite general statements about cooperation levels. Nevertheless, it can also be stated that it was beneficial to measure cooperation by an actual action of the interviewee. After all, to be able to make more general conclusions about the cooperation levels of the participants, future studies should consider including a relevant cooperation scale in addition to measuring how much the participant talked during the interview. A combination of both could give the most useful insights regarding cooperation levels.

The used case vignette could also be seen as somehow limiting the results. The case vignette described a theft on a military base which can be considered a serious crime. However, the sample in this study consisted mainly of students, who probably never encountered a situation like this. Consequently, it may have been hard for the participants to imagine themselves in the given scenario which might have influenced their feelings and behaviours. Therefore, future research should consider either using a scenario more fitting to the sample population of mostly students, such as for example including a scenario about property damage or adapting the used case vignette. To make the military theft scenario more realistic, future research could for example try to include a real live action besides only giving the participant the scenario in written form. This action could for example be a telephone call in which the participant should talk to someone playing a colleague from the military base who is stressing about not giving too much information during the police interview. By

combining a real action with the written case vignette, it may be easier to load the participants with guilt and consequently make the whole interview more realistic.

Besides these limitations, one can also acknowledge the strengths of this research. It was beneficial that this study made use of a mixed-methods research, by combining a qualitative interview with a quantitative survey. Therefore, it was possible to gain a deeper understanding and a broader perspective of behaviours as well as the internal feelings of the participants.

Additionally, one can argue that another strength of this study was the topic of vulnerability in investigative interviews itself. Since there is a research gap in how to best deal with vulnerable individuals, the investigation of the procedural information technique might be beneficial for improving the interrogation process in general. Furthermore, the investigated technique of providing procedural information in the form of a flyer to the interviewee before the interview could be easily adaptable for the police in practice.

Conclusion

This research aimed to investigate whether giving the suspect in an investigative interview procedural information would help in increasing the interviewees' willingness to cooperate and decrease the interviewees' anxiety levels. Moreover, the results provided first insights into the influence of procedural information on anxiety and cooperation levels.

Based on the performed analysis, it can be concluded that procedural information might have no effect on anxiety and cooperation levels due to the aforementioned reasons. However, the results of the explorative analysis can be treated as a first starting point with regard to improving police interviews for vulnerable citizens. Particularly, there was a slight tendency detectable for neurodiverse participants to have lower anxiety levels and higher willingness to cooperate when being provided with procedural information. Since it is not possible to make definite statements about the effect of providing procedural information on neurodiverse individuals, the insights must be considered and explored in future studies.

Furthermore, a difference in the effect of procedural information on anxiety and cooperation levels between neurodiverse and neurotypical participants was analysed as neurotypicals tend to cooperate less and have higher anxiety levels when being provided with procedural information. In line with the literature, it was found that indeed neurotypical and neurodiverse participants might differ regarding specific needs within a police interrogation. Concludingly, this highlights the importance of raising awareness that not everyone has the same opportunities to deal with a police interview in the same way.

Future research can use these insights to do additional analysis on this topic in order to acquire a better grasp of the subject. Specifically, considering including a screening for neurodiversity in future studies would help in increasing the generalizability of this unique sample. Concludingly, it can be said that being able to make more elaborative statements about vulnerable citizens and the effectiveness of providing procedural information within investigative interviews could help to improve interviewing techniques in the long run.

References

- Abbe, A., & Brandon, S. E. (2013). The role of rapport in investigative interviewing: A review. *Journal of investigative psychology and offender profiling*, 10(3), 237-249. DOI:10.1002/jip.1386
- Association of Chief Police Officers. (2010, January). *Guidance on responding to people with mental ill health or learning disabilities*. National Institute of Health and Care Excellence. <https://www.evidence.nhs.uk/document?id=1713091&returnUrl=search%3fps%3d30%26q%3dmentally%2bdisordered%2boffenders>
- Bull, R. (2010). The investigative interviewing of children and other vulnerable witnesses: Psychological research and working/professional practice. *Legal and Criminological Psychology*, 15(1), 5-23. DOI:10.1348/014466509X440160
- Duke, M. C., Wood, J. M., Bollin, B., Scullin, M., & LaBianca, J. (2018). Development of the Rapport Scales for Investigative Interviews and Interrogations (RS3i), Interviewee Version. *Psychology, Public Policy, and Law*, 24(1), 64. DOI: 10.1037/law0000147
- Eastwood, J., Snook, B., & Luther, K. (2014). On the need to ensure better comprehension of interrogation rights. *Canadian Criminal Law Review*, 18(2), 171. https://d1wqtxts1xzle7.cloudfront.net/43116415/On_The_Need_to_Ensure_Better_Co_mprehensi20160226-11685-1utndrx-with-cover-page-v2.pdf?Expires=1647799711&Signature=STQi1OptrWGWMWDDL4e1JueeJOc6wJSsYGTwnLtJNmIGAeGJsNdJu-eh314cBkKpt4JIzjMIad4nczHc9Ic1s7yEhFWSRzaKwxXUzKHjb8d1AjetRdeTfafgNrlfzUnpQZ3UcAs5y6t93UQ3dk0fjcJOc~9qbX-x2E-t6iBLRU3hslL5SqH8fJE-HrCaTtjMdnPwhMYBDsuMK40tHHJqAM7rsK-pqf~5f5a~tGtTzsUF9f9T~eKAT~nS2PSKVGMSpSgSGapHZMccoimChTEyhuZQf5qUZCJ4XgLO~J7XoF17zKvIO76hgXkokLB2E5mF1gvz8GwnJOo0Ssc2v5Lgkw__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA
- Farrugia, L., & Gabbert, F. (2020a). Forensic interviewing of mentally disordered suspects: the impact of interview style on investigation outcomes. *Current Psychology*, 41, 1-9. DOI: 10.1007/s12144-020-00747-8
- Farrugia, L., & Gabbert, F. (2020b). Vulnerable suspects in police interviews: Exploring current practice in England and Wales. *Journal of Investigative Psychology and Offender Profiling*, 17(1), 17-30. DOI:10.1002/jip.1537
- Goodman-Delahunty, J., Martschuk, N., & Dhimi, M. K. (2014). Interviewing high value

- detainees: Securing cooperation and disclosures. *Applied cognitive psychology*, 28(6), 883-897. DOI:10.1002/acp.3087
- Gudjonsson, G. H. (2010). Psychological vulnerabilities during police interviews. Why are they important?. *Legal and criminological Psychology*, 15(2), 161-175. DOI:10.1348/135532510X500064
- Gudjonsson, G. H., Young, S., & Bramham, J. (2007). Interrogative suggestibility in adults diagnosed with attention-deficit hyperactivity disorder (ADHD). A potential vulnerability during police questioning. *Personality and Individual Differences*, 43(4), 737-745. DOI:10.1016/j.paid.2007.01.014
- Herrington, V., & Roberts, K. (2012). Addressing psychological vulnerability in the police suspect interview. *Policing: a journal of policy and practice*, 6(2), 177-186. DOI:10.1093/police/par057
- Hoogesteyn, K. (2019). *What's the Room Got to Do with It?: Examining the Influence of Environmental Aspects in Investigative Interviews* (Doctoral dissertation, University of Portsmouth).
https://pure.port.ac.uk/ws/portalfiles/portal/26283029/Hoogesteyn_UoP_revised_thesis_FINAL.pdf
- Kieckhaefer, J. M., Vallano, J. P., & Schreiber Compo, N. (2014). Examining the positive effects of rapport building: When and why does rapport building benefit adult eyewitness memory?. *Memory*, 22(8), 1010-1023. DOI:10.1080/09658211.2013.864313
- Lauber, P. (in prep.). *The extent to which procedural information can predict vulnerable individuals' level of rapport and shared truthful information within investigative interviews* (Bachelor's thesis, University of Twente).
- Madsen, K., & Holmberg, U. (2015). Interviewees' psychological well-being in investigative interviews: A therapeutic jurisprudential approach. *Psychiatry, Psychology and Law*, 22(1), 60-74. DOI:10.1080/13218719.2014.918083
- Miller, J. C., Redlich, A. D., & Kelly, C. E. (2018). Accusatorial and information-gathering interview and interrogation methods: a multi-country comparison. *Psychology, Crime & Law*, 24(9), 935-956. DOI:10.1080/1068316X.2018.1467909
- Ministry of Justice. (2022, January). *Achieving Best Evidence in Criminal Proceedings: Guidance on Interviewing Victims and Witnesses, and Guidance on Using Special Measures*. National Police Chiefs' Council.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1051269/achieving-best-evidence-criminal-proceedings.pdf

- Mogavero, M. C. (2020). An exploratory examination of intellectual disability and mental illness associated with alleged false confessions. *Behavioral Sciences & the Law*, 38(4), 299-316. DOI:10.1002/bsl.2463
- O'Mahony, B. M., Milne, B., & Grant, T. (2012). To challenge, or not to challenge? Best practice when interviewing vulnerable suspects. *Policing: A Journal of Policy and Practice*, 6(3), 301-313. DOI:10.1093/police/pas027
- Powell, M. B., Fisher, R. P., & Wright, R. (2005). Investigative interviewing. *Psychology and law: An empirical perspective*, 11-42. <https://research-repository.griffith.edu.au/bitstream/handle/10072/406947/Powell507275-Published.pdf?sequence=3>
- Redlich, A. D., Kulish, R., & Steadman, H. J. (2011). Comparing true and false confessions among persons with serious mental illness. *Psychology, Public Policy, and Law*, 17(3), 394. DOI: 10.1037/a0022918
- Shawyer, A., Milne, B., & Bull, R. (2013). Investigative interviewing in the UK. In *International developments in investigative interviewing* (pp. 50-64). Willan. https://books.google.de/books?hl=en&lr=&id=GGoQBAAAQBAJ&oi=fnd&pg=PA24&dq=Shawyer,+Milne,+%26+Bull,+2013&ots=7AWjklWBH_&sig=90nrvMMPCr1TEV2JXxGwf0GQTjU&redir_esc=y#v=onepage&q=Shawyer%2C%20Milne%2C%20%26%20Bull%2C%202013&f=false
- Smets, L. (2012). *Police Investigative Interviewing. A new Training Approach* (Vol. 3). Maklu. https://books.google.de/books?hl=en&lr=&id=S_9zTCNq404C&oi=fnd&pg=PA7&dq=police+investigative+interviewing+smets&ots=2c1sQLYsls&sig=ZrnDr4opA2PDMo_kdaPho2_aE6s&redir_esc=y#v=onepage&q=police%20investigative%20interviewing%20smets&f=false
- Soukara, S., Bull, R., Vrij, A., Turner, M., & Cherryman, J. (2009). What really happens in police interviews of suspects? Tactics and confessions. *Psychology, Crime & Law*, 15(6), 493-506. DOI:10.1080/10683160802201827
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education*, 48(6), 1273-1296. DOI:10.1007/s11165-016-9602-2
- Tulving, E. (1993). What is episodic memory?. *Current directions in psychological*

- science*, 2(3), 67-70. DOI:10.1111/1467-8721.ep10770899
- Vanderhallen, M., Vervaeke, G., & Holmberg, U. (2011). Witness and suspect perceptions of working alliance and interviewing style. *Journal of Investigative Psychology and Offender Profiling*, 8(2), 110-130. DOI:10.1002/jip.138
- Vrij, A., Hope, L., & Fisher, R. P. (2014). Eliciting reliable information in investigative interviews. *Policy Insights from the Behavioral and Brain Sciences*, 1(1), 129-136. DOI:10.1177/2372732214548592
- Waite, R. (2007). Women and attention deficit disorders: A great burden overlooked. *Journal of the American Academy of Nurse Practitioners*, 19(3), 116-125. DOI:10.1111/j.1745-7599.2006.00203.x
- Weiher, L. (2020). *The impact of interview style on the development, maintenance, and transfer of rapport*. Lancaster University (United Kingdom).
<https://eprints.lancs.ac.uk/id/eprint/149132/1/2020weiherphd.pdf>

Appendix A

Coding scheme: Truthful information

The following truthful details were coded as 1 = mentioned, 0 = missing. Additional information is given in parentheses or information in quotation marks have to be named together. Synonyms or related words that are coded as well are separated with a back slash “/”. The details are based on the case vignette (Appendix D).

Truthful information:

Work, Military, Base, Contractor, Logistics/ Logistical support, Delivering/ deliver/ transport, Food, Equipment, Airport, “Engine parts”, Vehicle/ Vehicles, Friend, Smuggling ring/ smuggler ring, Smuggle, Money, Driver, Hide/ Can be hidden, Parts/ Pieces, Stock, Lorry/ Truck, Break down, Smaller, Rickshaw/ Rickshaws, Donkey, Packs, “Rickshaw engine”/ “Rickshaw engines”, “Metal parts”, “Army vehicle”/ Army’s own vehicle”, Checks/ Checkpoint/ Checkpoints, Engineer/ Engineers, Fix/ Fixing, “Military vehicle”/ “Military vehicles”

Appendix B

Rapport Scale (RS3i)

Below, you will find statements describing different ways a person might think or feel about the relationship between yourself and the police officer on a scale from 1 = "Strongly disagree" to 5 = "Strongly agree". *Please pick the answer that best describes the way you feel.*

	1 (strongly disagree)	2 (disagree)	3 (neither agree nor disagree)	4 (agree)	5 (strongly agree)
I think the police officer was generally honest with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer was skillful during the interaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer seemed to respect each other's knowledge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer seemed to have their culture in common.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer performed expertly during the interaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that the police officer can generally be trusted to keep their word.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1 (strongly disagree)	2 (disagree)	3 (neither agree nor disagree)	4 (agree)	5 (strongly agree)
Communication went smoothly between the police officer and me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The interaction partners were interested in each other's point of view.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and me seemed to feel committed to accomplishing the goals of the interaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 (strongly disagree)	2 (disagree)	3 (neither agree nor disagree)	4 (agree)	5 (strongly agree)
The police officer paid careful attention to my opinion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and me got along well during the interaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and me worked well together as a team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and me probably share the same culture.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer wanted to do a good job during the interaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and me were attentive towards each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 (strongly disagree)	2 (disagree)	3 (neither agree nor disagree)	4 (agree)	5 (strongly agree)
The police officer shares the same ethnicity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer really listened to each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer was motivated to perform well during the interaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the police officer can be trusted to keep their word to each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer made an effort to do a good job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer acted like a professionals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix C

Working Alliance Inventory (WAI)

Below, you will find statements describing different ways a person might think or feel about the relationship between yourself and the police officer on a scale from 1 = "Strongly disagree" to 5 = "Strongly agree". Please tick the number that best describes the way you feel.

	1 (strongly disagree)	2 (disagree)	3 (neither agree nor disagree)	4 (agree)	5 (strongly agree)
I felt uncomfortable with the police officer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was worried about the outcome of the interview.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the things I did during the interview confusing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe the police officer liked me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was clear to me what my responsibilities were during the interview.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The goals of the interview were important for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1 (strongly disagree)	2 (disagree)	3 (neither agree nor disagree)	4 (agree)	5 (strongly agree)
I believe the police officer was genuinely concerned about my welfare.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was clear to me what the police officer wanted me to do during the interview.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and I respected each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and I worked toward mutually agreed goals during the interview.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and I agreed on what was important to discuss during the interview.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police officer and I trusted each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My relationship with the police officer during the interview was important for me.

I had feelings that the police officer would get angry if I said or did something wrong.

The police officer and I worked together to set the goals for the interview.

The things that the police officer asked me to do during the interview did not make sense.

I did not know what outcome to expect of the interview.

I felt that the police officer respected me, even when I said things that he/she does not approve of.

1 (strongly disagree)

2 (disagree)

3 (neither agree nor disagree)

4 (agree)

5 (strongly agree)

I did not understand what the police officer and I tried to accomplish during the interview.

The police officer and I found that the interview proceeded fairly.

The police officer and I agreed on what we had to do during the interview.

The police officer and I did not agree on what the interview should deliver.

The police officer and I shared the same goals.

1 (strongly disagree)

2 (disagree)

3 (neither agree nor disagree)

4 (agree)

5 (strongly agree)

Appendix D

Case vignette

Your case

Please imagine yourself in the following situation:

You work on a military base as a local contractor. You are not part of the army but help out with logistical support delivering food and equipment from the local airport. The base has recently been experiencing a lot of theft of equipment, such as engine parts for vehicles.

A couple of days ago, a close friend of yours told you that he is part of the smuggling ring and that they are short on drivers at the moment. He asked you to smuggle equipment out of the base. As you could really use that extra money, you agreed to help smuggle equipment.

As a driver, you know of various ways you could smuggle parts. The easiest way would be to hide the parts in with the rest of the stock on a lorry. Other ways are to break the parts down so they can be hidden in much smaller and less conspicuous vehicles like the small rickshaws many of the locals use to drive on and off base, or even hidden in donkey packs.

Your friend told you that the smugglers are breaking down the parts and hiding them in the rickshaw engines. You do not know who else is part of the smuggling ring, only that you have heard the other drivers talking about how people are smuggling parts out of the base:

The lorries are too risky because of the number of times they will be checked, and the donkeys usually bring food supplies so metal parts would gather too much attention. Using the army's own vehicles would be the safest way to bypass the checkpoints but the army usually uses its own engineers to fix them when they break so opportunities to get the parts on board would be limited and very risky. On the other hand, few of the soldiers at the checkpoints have the mechanical knowledge to be able to spot the extra parts fitted to the rickshaw engines.

However, you decide for the following strategy to smuggle the parts: You break down the parts and put them in the military vehicle. Then you avoid the checks at the base checkpoint and then take the parts out at the other end. It is the riskiest thing to do, but also the least likely to be discovered.

You are worried about what might happen to you or your family if anyone found out you helped with the investigation. Be wary: you need to give the interviewer enough information that you remain a source and therefore under the protection of the police. On the other hand, try to avoid giving them any information that might incriminate you or your friends.

Appendix E

State-Trait Anxiety Inventory

This is a scale that measures your feelings on a scale from 1 = "Not at all" to 4 = "Very much so". Please indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feeling best.

	1 (Not at all)	2 (Somewhat)	3 (Moderately so)	4 (Very much so)
I feel calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel secure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel tense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel strained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel at ease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am presently worrying over possible misfortunes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1 (Not at all)	2 (Somewhat)	3 (Moderately so)	4 (Very much so)
I feel satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel frightened	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel self-confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel jittery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel indecisive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	1 (Not at all)	2 (Somewhat)	3 (Moderately so)	4 (Very much so)
I am relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am worried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confused	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel steady	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix F

Informed Consent

Purpose

The purpose of this research is to develop a better understanding of how individuals behave within investigative interviews.

Procedure

The study consists of two parts, first, you will participate in an interview and then you will be asked to fill out a questionnaire. The interview is conducted online over MS Teams using a computer, tablet, or any other electronic device. You will need a stable internet connection. It will also be recorded by the researcher and saved until the interview is coded for the upcoming data analysis. You will receive a case vignette within 24 hours before the scheduled interview and are asked to imagine yourself in the given scenario. It is important that you read the case vignette carefully as the scenario described will be the base for our interview. Then, a standardised interview follows which re-enacts a voluntary police interview where the goal is to receive more information about the case. After the investigative interview, you will be asked to complete an online questionnaire via Qualtrics using a computer, tablet, or any other electronic device. You again need to have a stable internet connection. If you decide to enrol in this study, your involvement will take between 20 and 30 minutes and you will receive SONA credits for your participation if you are eligible. To ensure confidentiality, your responses will be fully anonymous: we will not collect any personally identifying information from you, and your responses will not be traceable back to you. The anonymous raw data might be made publicly available for other researchers.

Risks or Discomforts

We foresee no risk with participating in this study.

Participant Rights

Your participation is voluntary. You may choose not to take part in the study or to stop participating at any time, for any reason, without any consequences. You will receive full compensation also if you stop participating. To withdraw participation at a later time, please inform the principal investigator via email within 10 days of your participation. If you have questions about your rights as a research participant, wish to obtain information, or discuss any concerns about this study with someone other than the researcher(s), please contact the Secretary of the Ethics Committee, ethicscommittee-bms@utwente.nl For further information

about this study, contact the researchers' Lotta Brieger or Pia Lauber.

Consent and Authorization Provisions

Your consent indicates that:

I understand that any information given by me may be used in future reports, articles, publications or presentations by the researcher/s, but that my data will not be identifiable.

I agree to take part in the study.

I understand that my participation is voluntary and that I am free to withdraw my participation, without explaining.

Appendix G

Flyer with Procedural Information

Voluntary Police Interview What You Need to Know

You have been asked to attend a voluntary interview with the police or another law enforcement agency: This flyer will provide you with information about the voluntary police interview including what you can expect, and what your rights are.

What is a voluntary police interview?

A voluntary police interview or interview under caution is a formal conversation with police.

The interview aims to gather as much information about a specific incident as possible.

You do not have to attend, and you can leave at any time once the interview has begun.

While a voluntary interview might be conducted in a less formal way than an interview under arrest, **the conversation will still be recorded** and anything you say can potentially be used against you in any subsequent criminal proceedings.

The Interview

Before the interview, you are formally cautioned. Your legal rights are:

Right to hire your own lawyer

If you do not have a lawyer, you can apply for a free lawyer, we will provide you with a phone number

Right to remain silent (you do not have to answer questions if you do not want to)

Everything you say can be used against you in front of a court of law

At the start of the interview, your interviewer will tell you:

The names of all people in attendance

The purpose of the interview – including the incident under investigation

That you can choose to end the interview at any time

That you do not have to say anything

That anything you do say can be used against you in a court of law

During the interview, the police officer will ask you questions which can cover issues such as:

Your whereabouts at certain times

Whether you know certain people

Your knowledge of specific events

You have the right to breaks (normally 15 minutes every two hours) if the interview goes on for this long.

Appendix H

Condition 1: Interview Guideline

Hello, I will talk with you today about the equipment theft at the military base.

I need to establish whether you know anything about the incidents. But, before we start, I just want to go over some ground rules for today, alright?

You have the right to hire and talk to your own lawyer right away. You have the right to free legal advice from a government lawyer right away. If you want this free legal advice, I will give you a telephone number to call. If you are charged with a crime, you can apply for a free lawyer to help you with your case.

For your protection and for mine I will record this, so we get a full account of what was said today, OK? Also, when you're talking, I'm not going to interrupt you and I hope you can do the same for me. If you have any questions, please ask me. I might ask you to repeat some things because I want to make sure I understand everything. The main purpose here is to get as much information as possible. So, it is important that you tell me everything in as much detail as possible without leaving things out. This is important because I wasn't there, so I don't know what happened.

OK, so we'll begin the interview now.

- Please tell me what you normally do at the base.
- Please tell me in as much detail as possible everything that you know about the smuggling.
- Please tell me more about the smuggling.
- How would you smuggle equipment out of the military base?
- Which part would you find most challenging of smuggling equipment?
- What can you tell me about who is involved?
- What else can you tell me about the smuggling?

Appendix I

Condition 2: Interview Guideline

Hello, my name is Lotta Brieger and I am the responsible police officer for this case. I will talk with you today about the equipment theft at the military base. This voluntary first interview is for us to collect as many information as possible to get the full picture of this case.

I need to establish whether you know anything about the incidents. But, before we start, I just want to go over some ground rules for today, alright?

You have the right to hire and talk to your own lawyer right away. You have the right to free legal advice from a government lawyer right away. If you want this free legal advice, I will help and give you a telephone number to call. Meaning, If you are charged with a crime, you can apply for a free lawyer to help you with your case. Furthermore, you have the right to remain silent and I also want to make sure that you understand that everything you say can be used against you in front of court. Also, you are allowed to choose to end this interview at any time.

Do you have any questions about your legal rights?

For your protection and for mine I will record this, so we get a full account of what was said today, OK?

The interview will take up to 10 minutes. Only the both of us will be present and when you're talking, I'm not going to interrupt you and I hope you can do the same for me.

If you have any questions, please ask me. I might ask you to repeat some things because I want to make sure I understand everything. The main purpose here is to get as much information as possible. So, it is important that you tell me everything in as much detail as possible without leaving things out. This is important because I wasn't there, so I don't know what happened.

OK, so we'll begin the interview now.

- Please tell me what you normally do at the base.
- Please tell me in as much detail as possible everything that you know about the smuggling.
- Please tell me more about the smuggling.
- How would you smuggle equipment out of the military base?
- Which part would you find most challenging of smuggling equipment?

- What can you tell me about who is involved?
- What else can you tell me about the smuggling?

Appendix J

Additional Questions

Below you find two statements concerning a follow-up interview. Please tick the answer that best describes the way you feel.

	Yes	No
Would you be willing to return to a more in depth interview?	<input type="radio"/>	<input type="radio"/>
Would you want legal representation during any such interview?	<input type="radio"/>	<input type="radio"/>

How motivated were you to take part in this interview?

	1 (not motivated at all)	2	3	4	5 (very motivated)
Motivation:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix K

Debrief

Study objective

This study is interested in how procedural information influences rapport, anxiety level, cooperation level and amount of information given by the participants. We generally aim to investigate this for neurodiverse individuals.

This study hopes to answer the question if you as the interviewee perceive the investigative interview differently when receiving procedural information prior to the interview.

How did it work?

As a participant in this study, you received the case vignette and were randomly assigned to one of two conditions. Furthermore, we manipulated the following factor: in the control condition, only legal rights were given before the interview, which is what the police does nowadays. In the manipulated condition we provided procedural information in a written as well as spoken manner in addition to the legal rights. Procedural information includes interview settings such as the time needed for the interview, who will be there or the aim of the interview. After the interview, everyone receives the same survey with which we want to measure if anxiety, rapport, cooperation and the amount of correct information differ between the two conditions.

Why is this important?

By participating in this study, you contributed your part to research with regard to forensic contexts when interviewing suspects. This research adds to the existing pool of knowledge on investigative interviewing with a focus on police interviewing techniques. The purpose of this research is to develop a better understanding of how different techniques influence the quality of the investigative interview.

Withdrawing Policy.

If you decide that you want to withdraw from this research, please contact us (researchers) within 10 days and quote your participation number to allow us to locate your data and withdraw it.