

Simulating border control: Examining the Effect of Procedural information on self-rated rapport during investigative interviews on people with autism spectrum disorder

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Abstract

Investigative interviews are of key importance when striving to resolve crimes, as these allow officers to obtain an accurate overview of the events that led to an offense. To conduct a successful interview, establishing a good rapport between the interviewer and interviewee is of great importance. People with Autism Spectrum Disorder (ASD) experience these interactions more intensely and cognitive demanding. Therefore the interviewing process needs to be adapted to their specific needs. Hence, this research aims to test whether giving procedural information before an interview to individuals with ASD, will increase the level of self-rated rapport during an investigative interview compared to not giving any prior information. This research consists of a 2 (information vs. no information) x 2 (autism vs neurotypicals) between-subject-design with a final sample of 43 participants. An ANOVA analysis was conducted to test the relationship between the groups, which showed a non-significant difference across all four groups. Therefore, the results show that giving procedural information does not necessarily affect the level of self-rated rapport during an investigative interview for both the autistic and neurotypical groups. Although the results show a non-significance it is important to take into consideration the small sample of participants that was obtained, which mostly consisted of students at the University of Twente. Future research should involve a larger more diverse sample and tailored testing methods to validate and extend the current findings.

Introduction

Investigative interviewing is a key process in the criminal justice system. It allows police officers to further the investigation process, which can lead to the solving of a crime (Abbe & Brandon, 2012). Milne and Powell (2010) highlighted the two key aims of any investigation process; the first one being to find out what happened, and the second one to discover who did what. In investigative interviews, it is therefore of key importance to use non-leading and open-ended questions, as they refrain from any suggestions or presumptions, allowing the interviewee to recall the facts as they remembered (Milne & Powell, 2010). Previous research has found that many police officers, when performing investigative interviews, aim for a confession or disclosure, where the goal should be to obtain as much accurate information as possible in order to establish which hypothesis amongst many others is the correct one (Milne & Powell, 2010).

In order to obtain as much information as possible during the investigative process, building strong rapport is of key importance (Abbe & Brandon, 2013). Previous research has considered rapport as “the heart of an investigative interview” (Vrij et al., 2014), and has been defined as the positive affect or feeling between two individuals (Abbe & Brandon, 2013). Establishing a strong rapport makes use of both verbal and non-verbal techniques, like having a relaxed posture, mimicking the interviewee to show attention or asking questions to show interest in the other parties account (Vrij et al., 2014). This positive relationship can be beneficial in obtaining the best evidence from an investigative interview.

To get a more in-depth look into rapport the Tickle-Degen and Rosenthal framework (Tickle-Degnen & Rosenthal, 1990) can be used. This framework was originally developed for physician-patient interactions and therapeutic settings, however, it has been applied to investigative interviews as well because of its cross-disciplinarity (Tickle-Degnen &

Rosenthal, 1990). The framework states that rapport is composed of three main factors: the first factor includes mutual attentiveness, which refers to the sharing of mutual interest and focus; the second one being positivity, the use of a friendly and caring approach towards each other; and the last one being co-ordination, or the balance and harmony between the interviewer and interviewee (Tickle-Degnen & Rosenthal, 1990). These three components of rapport have differing effects on the interaction and require different levels of emphasis during the interview (Abbe & Brandon, 2012).

Establishing good rapport between an interviewer and an interviewee is crucial to effective encounters between the two parties. (Walsh & Bull, 2011). As Abbe and Brandon (2012) reported, the use of rapport in investigative interviews can allow for obtaining more accurate and truthful information about the occurrence of certain events, as well as for creating a more harmonious relationship. Rapport has been associated with positive interview outcomes and the disclosure of important information (Matsumoto & Hwang, 2021). Generally, rapport has been proven to be useful during the interview process for neurotypical individuals, which refers to people who exhibit standard patterns of thought, behaviour, or cognitive functioning (McLeod et al, 2019). Yet little research has been done on how rapport applies to people with vulnerabilities.

The process of interviewing can be stressful for some witnesses, especially children, people with learning differences, or those with physical, communicative or mental disabilities (Asquith & Bartkowiak-Théron, 2021). In the last few years, police justice systems around the world have shown the awareness to accommodate these vulnerable witnesses at each stage of the interviewing process (Norris et al., 2020). However, according to Asquith and Bartkowiak-Théron (2021) mainly actions have been taken to accommodate this process

towards children, while not much focus has been put on individuals with mental disorders like ADHD and Autism Spectrum Disorder (ASD).

Investigative interviews with Autism Spectrum Diagnosis (ASD)

For people with ASD, the interviewing process can look different compared to a neurotypical individual (Åker & Johnson, 2020). ASD is a neurodevelopmental disorder characterised by persistent difficulties in social communication and interaction, as well as restricted and repetitive behaviours, interests, and activities (Bagnall et al., 2023). ASD can influence individuals across a range of severity levels, meaning that, an ASD diagnosis can be linked to various combinations of behavioural deficits and excesses (Kodak & Bergmann, 2020). Individuals on the spectrum might experience their everyday environment differently than neurotypical individuals. For example, they might experience bright lights, certain smells or noises as overwhelming, stressful or uncomfortable.

Individuals on the spectrum not only experience their surroundings differently, but they might also experience it a lot more intensely than neurotypical individuals. This is because they have an atypical sensory processing, which enhances most stimuli surrounding them, causing a person to overstimulate and, therefore, engage in sensory defensive behaviour, like covering their ears, squinting their eyes or avoiding eye contact (Normansell-Mossa et al., 2021). Individuals with ASD possess a less effective sensory processing when it comes to managing stress and properly assessing dangerous situations (Normansell-Mossa et al., 2021). These differences in sensory processing together with social communication and interaction deficits can present a higher likelihood of encountering law enforcement as either a victim, witness or suspect (Maras et al., 2020).

When unexpectedly presented with law enforcement, individuals with ASD might perceive the situation as highly stressful and anxious. This is due to people with ASD experiencing higher intolerance to uncertainty, which makes them strictly adhere to routines and makes it difficult for them to tolerate change and unexpected events (Boulter et al., 2013). These heightened levels of intolerance to uncertainty arise from the atypical information processing that people with ASD possess (Chamberlain et al., 2013), which in turn, makes them be very persistent on experiencing stimuli that they have already experienced (Boulter et al., 2013). This causes people with ASD to experience heightened levels of anxiety and stress during the process of investigative interviews which can make it difficult for both parties to establish rapport.

Furthermore, these differences in sensory and memory processing present challenges during the interview process. Maras et al. (2020) expressed that people on the spectrum have difficulties encoding and retrieving information. These episodic memory difficulties pose a challenge when recalling important events for the purpose of an investigative interview. For individuals with ASD, their narratives often lack causation and coherence, especially when it regards the temporal gradient of the event (Maras et al., 2020). These narrative difficulties can in turn be explained by the difficulty of generating and organizing one's recall of an event. Norris et al. (2020) stated that autistic adults tend to retrieve fewer or less specific memories, while also taking significantly longer to do so. Consequently, Bagnall et al. (2023) claimed that autistic witnesses often tend to provide less detailed free-recall accounts due to their differences on episodic memory.

Not being able to produce a fully connected version of the events followed by less effective sensory processing can lead to officers interpreting people with ASD as evasive or deceptive during the course of an interview (Norris et al., 2020). This interpretation can lead the officer to follow up with more questioning, increasing the pressure on the interviewee.

This could eventually lead to a breakdown in rapport and in turn, lead to false confessions (Bagnall et al., 2023). These issues become more pronounced due to the stress associated with a suspect's interview, as individuals with autism might experience it as extremely demanding both socially and cognitively (Bagnall et al., 2023).

This process becomes more persistent as people with ASD may not necessarily be recognized immediately by police officers as vulnerable individuals (North et al., 2008). This occurs particularly among very intellectually able individuals, who are able to mask their vulnerabilities and the level of support and adaptations they require (Maras, 2021). When they mask their behaviours, they are able to camouflage or mimic other people's behaviours in order to hide their mental differences (Alaghbandrad et al., 2023). The inability to recognize individuals on the spectrum makes it harder for police officers to provide an interview structure that is adapted to their needs (Walsh et al., 2023).

Nowadays, there is still no agreed upon interview structure that is adapted to the needs of people with ASD, but lately research has started to focus more on how to achieve this. Maras et al. (2020) came up with an interview technique called Wafa (Witness-Aimed First Account) which focused on breaking down the event to be remembered in small segments first, before they need to be recalled. By separating it into small fragments, the interviewee is able to recall small amounts of information at a time, therefore reducing the cognitive load, in other words, reducing the mental effort and resources required to process information. Additionally, Norris et al. (2020) investigated the type of questioning that was used in investigative interviewing, focusing mainly on the use of open-ended questions. This study found that using open ended questions hinders the amount of information that can be recalled, therefore, using more specific and supportive cues allows autistic people to recall more information. Overall, both of these techniques focus on reducing the cognitive load of the interviewee by reducing the amount of information that needs to be remembered at a time.

Based on this research, it seems that reducing the cognitive load of the interviewee is the main factor for improving investigative interviews for people with ASD. Although the WAFAs framework has been proven to be helpful for autistic people, it does not directly focus on the reduction of uncertainty. The reduction of such uncertainty will reduce the anxiety and stress felt by the interviewee, and indirectly increase rapport, because the more relaxed and less anxious an interviewee is, the better strong rapport can be built. This could be done by providing procedural information about the expectations of an investigative interview.

Procedural information

To adapt and ease the investigative interviewing process for people with ASD, providing them with a guideline of what to expect from the interview could reduce the mental load of the individual. This information would include who would do the interview and where, as well as the aim, and legal rights of the person. As stated by Vallano & Compo (2011) in order to establish strong rapport and allow for a better interaction between the parties, it is of great importance that the interviewee feels comfortable. Giving pre-interview information about the expectations of such an interaction, could allow people with ASD to feel less anxious and stressed and therefore feel more relaxed and comfortable. This would create a better environment to create strong rapport and allow for better interview outcomes.

By providing such information beforehand, the level of uncertainty experienced would also diminish, freeing up some cognitive resources required to elicit an appropriate strategy to tackle the interview (Maras et al., 2020). Allowing the individual to create a strategy will allow for a more structured interaction, which will be helpful for people with ASD, as they find order and rules a great method of surviving the social world (King & Murphy, 2014). Providing this information would therefore also reduce the stress and anxiety felt by the individual, allowing the interviewee to feel more comfortable and eventually

increase rapport (Abbe & Brandon, 2013). Higher levels of rapport will eventually lead to an increased cooperation and therefore better interview outcomes (Walsh & Bull, 2011).

Next to that, in the information provided beforehand, the rights of the individual should be expressed in a clear and comprehensive manner. Previous research found that when the rights are being told to an interviewee, they are normally expressed in a rapid and complex manner (Akca et al., 2021). Additionally, as stated by Copenhaver and Tewksbury (2018), before the interview, interviewers should give an overview of the rights of the person, including their right to equal protection by the law, individual autonomy, the right to a consultant and many others. Providing an overview of the rights of the person would allow the individual to be more prepared when initiating the interview.

To support this claim, previous research by Lauber (2022) tested whether giving procedural information will influence rapport, although this study's sample was relatively small and focused on vulnerable individuals in general, a trend was found that pre-information increased preparedness and decreased stress and anxiety for neurotypical people.

Present study

People with ASD have significant struggles in the police interviewing process, many of which these challenges can hinder rapport, by increasing the anxiety and stress. For example, when there is a situation with high uncertainty, people with ASD feel more anxious and agitated, therefore not allowing for proper rapport building. In order to reduce this uncertainty in such situations, providing information before the interview about the aims and expectations could help decrease the anxiety and stress felt by the individual. Contrary to the study by Lauber (2022), this study focuses specifically on people with ASD and measures for the direct relationship in between procedural information and rapport. Therefore, this study, aims to test whether giving procedural information to people with ASD will increase self-

rated rapport, compared to neurotypical subjects. This will be done with the aim of easing the investigation process for people on the spectrum in the future. Therefore, the following research question was created: “To what extent does giving procedural information to individuals with ASD increase the level of rapport felt during the investigative interview process compared to neurotypical individuals?”. This will be determined by observing whether procedural information affects self-rated rapport for autistic individuals, compared to the case where they were not given any procedural information. This process will be repeated for neurotypical individuals to be able to compare both groups. According to previous research, receiving additional information reduces stress and anxiety felt during the interview, and will, therefore, have an effect on rapport (Copenhaver & Tewksbury, 2018). On the basis of this information, the following hypothesis was created:

H1: Giving procedural information will increase self-rated rapport felt during the interview process for people with autism spectrum disorder compared to neurotypical individuals

Based on this hypothesis, if procedural information has an effect on rapport, then it would be expected that rapport increases when procedural information is given for the case of people with ASD, while there would be no difference for neurotypical people.

Methods

Design

This study consisted of a 2 (information vs. no information) x 2 (autism vs Neurotypicals) between-subject-design. The independent variable in this case was procedural information, and the dependent variable was the self-rated rapport felt during the interview by the participant. The participants were assigned randomly to either the procedural information or no procedural information groups.

Participants

The sample consisted of 53 students, of whom 10 were excluded due to them not completing the full questionnaire, this meant that they had either not completed some of the items presented or that they had not filled the demographics completely. Therefore, the final sample was 43 students. The final sample had a gender distribution of 13 men ($M = 23$, $SD = 3.08$) and 30 women ($M = 21.3$, $SD = 2.05$). The age of the participants ranged from 18 to 29 years, with a mean age of 21.81 years ($SD = 2.50$). The sample contained 15 from Germany ($M = 22.33$, $SD = 2.22$), 13 participants from Dutch nationality ($M = 22.53$, $SD = 3.30$), and 15 from other countries ($M = 20.66$, $SD = 1.49$).

Participants for the study were gathered using multiple sampling methods, the first one used was convenience sampling, meaning that the study was advertised through social media platforms like WhatsApp or Instagram. Additionally, the study was published on the Utwente SONA system, which allows students of the University of Twente to sign up for other peers' studies in exchange for a specific number of credits. The study also used snowball sampling, where the knowledge of the study was passed by word of mouth between participants. The requirements to participate in this study were to be 18 years old or older as well as having a good understanding of English, as the survey was only available in English. The study was approved by the BMS ethics committee of the University of Twente, with reference number 240141.

Materials

Rapport scale for investigative interviews and interrogations (RS3i)

To analyse the rapport, the rapport scales for investigative interviews and interrogations (RS3i) interviewee version scale (Duke et al., 2018) was used (Appendix C). The scale consisted of a 5-point Likert-scale (1 = "Strongly disagree" and 5 = "Strongly agree") with 21

items. Some of the statements included “The interviewer and I worked well as a team”. Or “The interviewer was interested in my point of view”. This scale indicated a Cronbach’s alpha of 0.92, indicating a very strong internal consistency, showing that the scale is reliable and will most likely produce consistent results among repeated administrations.

Autism-Spectrum Quotient (AQ)

The Autism-spectrum Quotient (AQ) (Baron-Cohen et al., 2001) scale was used to measure the autism spectrum (Appendix D), in the case the participants did not have a diagnosis. The scale consisted of a 4-point scale (1 = “Strongly disagree” and 5 = “Strongly agree”) with 50 items. Some of the statements included “I enjoy meeting new people”, “I find it easy to do more than one thing at once” or “I am not really good at remembering phone numbers”. The scale indicated that when the participant scored more than 26, this would mean the individual was autistic. The autism scale had a Cronbach’s alpha of 0.75, also showing a strong internal consistency and allowing for consistent replicability.

Case vignette and task

A mock situation was presented to the participants by the use of a case vignette. The participants were told to read the case vignette one by one. The case vignette consisted of nine pictures with text (Appendix F), where the participant would click through them at their own pace, to ensure they have enough time to read everything. The case vignette started by asking the participant to put themselves in the following situation. Then it continued explaining the trip they would have taken to Madrid with a friend, as well as the popular places the participant would have visited after the friend left. The typical foods and other activities they would have undertaken like going to a scape room and going out for dinner were also explained. The pictures ended with the participant going to the airport to travel back to the Netherlands.

After going to the airport, the participants were presented with a task. The task consisted of packing a bag with a series of items that were lying next to it (Appendix E). The items included a pair of flip flops, sunscreen, a hat, sunglasses, a book, a towel, and a t-shirt. The participants were free to choose which items they would pack in the bag.

Procedural information and article

Once the participants had completed the case vignette, they were assigned to either the procedural information (Appendix A) or an article which presented random information non-related to the interview (Appendix B). The procedural information explained “what you need to know” before an investigative interview. This included the definition of an investigative interview as well as the legal rights of the participant. The information also included how the procedure at the start of the interview and during the course of the interview should go. The article that was given to the condition with no procedural information was titled “Dazzling debut of racial identity”, which summarized the life of Trelawny’s, described as a racially ambiguous black man. This article was given as the control condition in order to match the procedure and timing of the experimental condition.

Recorder

A recorder was used to record the investigative interview, which was borrowed from the BMS lab at the university of Twente. The recordings were then zipped with a password twice and stored in a UT Microsoft account.

Procedure

To start off the experiment, participants were taken into a room, the location of which changed depending on the availability of rooms at the University of Twente. The room was empty except for a table with a laptop on it and the bag with the previously described series of items (Appendix E). Secondly, the participants were shown the informed consent form

(Appendix H) before they could continue with the rest of the experiment. Once the participant gave consent, the first part of the questionnaire started. First, the scales to measure anxiety and stress were presented, these were used by the other researchers with whom this research collaborated with. Subsequently, the case vignette (Appendix F) was shown. Then the participants were required to pack the bag next to them with items of their choosing. Afterwards, participants were assigned to either the procedural information or non-procedural information group. After they had time to read the leaflets in front of them, the interview process started.

The researcher left the room and allowed the researcher acting as “officer at border control” into the room to commence the investigative interview. The officer then explained the rights to the participant and if they agreed, the interview started (Appendix G). The interview was structured to ensure that each participant got the same questions in the same order, which is vital to the replicability and validity of the study. The interview followed a funnel-like structure, starting with more broad questions regarding the origin of the travel such as “Where did you travel from into the Netherlands?” or “What were you travelling for?”. Following, more specific questions about the items packed in the bag were asked such as “Is this your bag?” or “How many pieces of luggage do you have checked in?”. Lastly, some closing questions such as “Please tell me if there are any goods, you need to declare.” or “Would it be okay for me to check your bag?”. The officer then proceeded to check the content of the bag and ended the interview with “Thank you that is all I needed to know for now.” Then, the officer left the room and allowed for the first researcher to come back into the room.

Once the interview was completed, the participant answered the final questionnaire, measuring the plan and strategy going onto the interview as well as the anxiety, stress and rapport felt during the interview. For the scope of this project, only the rapport variable was

used. Towards the end of the questionnaire, participants were asked if they had received an official diagnosis for ASD. For this question, participants could answer “Yes”, “No” or “I don’t know”. If the answer was “Yes”, they were redirected to the demographical questions, asking about their gender, age and nationality. If the answer was “No” or “I don’t know”, they were redirected to the autism spectrum questionnaire and followingly to the demographics questionnaire. Once all of this was filled in, the participants were redirected to the “debrief” page where the objective of this study was explained thoroughly, as well as the importance of the research. Lastly, they were informed of the withdraw policies and given the contact information of the researchers for further questions.

Data analysis

The program R-Studio with the packages “foreign, broom, tidyverse, stats, haven, ltm, psych, janitor, car, base” were used for the cleaning and analysis of the acquired data. First, the data was filtered, by selecting out any participants that did not fulfil the inclusion criteria such as being older than 18 years old. Followingly, the descriptive statistics were conducted together with a boxplot to visualize the data.

Finally, a 2x2 analysis of variance (ANOVA) was carried out to examine the effects of procedural information (procedural information and no procedural information) and autism diagnosis (autism diagnosis and no autism diagnosis) on self-rated rapport. Because of the small sample of participants that was obtained the Wilcoxon rank-sum test was conducted, in order to gain further understanding of the relationship between the variables.

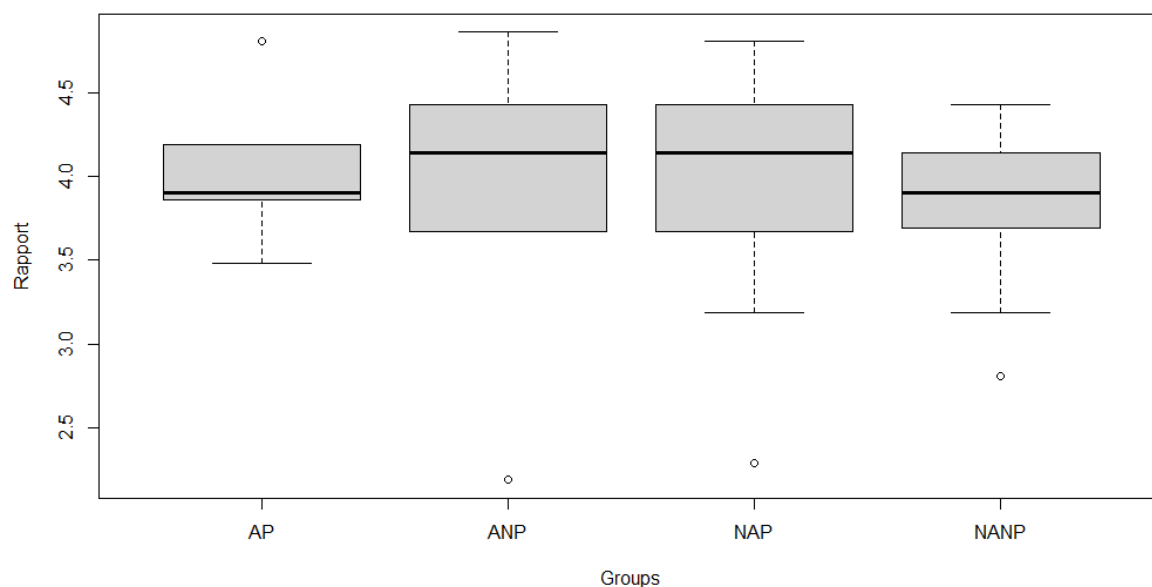
Results

The data were normally distributed, the rapport scale had mean of 3.94 (SD = 0.62) and the autism scale had a mean of 22.44 (SD = 12.19).

A non-significant interaction effect between autism diagnosis and procedural information was observed. Meaning there was a non-significant difference between the no procedural information condition ($M = 3.98$, $SD = 0.58$) and the procedural information condition ($M = 3.85$, $SD = 0.59$) $F(1,39) = 0.47$, $p = 0.49$, $\eta^2 = 0.01$. There was also no significant difference between the autism diagnosis ($M = 3.95$, $SD = 0.77$) and the non-autism diagnosis ($M = 3.91$, $SD = 0.53$) $F(1,39) = 0.04$, $p = 0.84$, $\eta^2 = 0.00$. Finally, a non-significant interaction effect between autism diagnosis and procedural information of $F(1,39) = 0.03$, $p = 0.84$, $\eta^2 = 0.00$ was observed. Although these results showed that there was no statistical difference between any of the groups, a boxplot was created to obtain a visual representation of the data.

Figure 1

Boxplot exploring the spread of values and residuals for groups AP, ANP, NAP and NANP



Note. AP = autism/procedural information; ANP = autism/non-procedural information; NAP = non-autism/procedural information; NANP = non-autism/non-procedural information

The autistic/non-procedural and the non-autistic/procedural information groups showed higher median rapport scores compared to the autistic/procedural information and non-autistic/non-procedural information groups. The autism/non-procedural information group showed the highest variability in rapport scores. The presence of outliers in the non-autism/procedural information, autism/non-procedural information and non-autism/non-procedural information groups suggested that while most participants had similar experiences, there was one participant per group that felt much less rapport. The opposite applied for the autistic/procedural information group, having one outlier that experienced much more rapport. In order to see whether these outliers affected the data, they were removed, and another ANOVA analysis (Appendix I) was carried out, these showed that the absence of outliers does not change the significance of the data.

With the aim of expanding the analysis and looking for trends between the groups, the Wilcoxon rank-sum test was performed to compare the two procedural and two autistic groups against each other. No significant difference was found between the distributions of the autistic/procedural information group ($n = 5$) and the non-autistic/procedural information group ($n = 16$), $W = 47.5$, $p = .56$. Similarly, the distributions of the autistic/procedural information group ($n = 17$) and the autism/non-procedural information group ($n = 5$) were statistically the same, $W = 13$, $p = 1$.

Discussion

The purpose of this study was to test whether giving procedural information to individuals with Autism Spectrum Disorder (ASD) would increase the level of self-rated rapport felt after an investigative interview, compared to neurotypical individuals. At the start of this research, it was hypothesized that supplying procedural information would increase the level of self-rated rapport felt by the individual, as this would reduce the uncertainty felt during the situation. However, the results showed no difference between the people that

received procedural information and the ones that did not receive any procedural information, for both the autistic and neurotypical groups.

In the following section, the potential reasons behind the observed null results were explored. The first reason to explain the low levels of rapport scored by each group is the type of interview that was presented. The rigid structure of the interview may have interfered with the relaxed and open communication that should occur to build strong rapport. As stated by Miller (2019), the use of structured interviews can hinder the rapport felt between the two parties. Additionally, as expressed by Milne and Powell (2010) to have successful investigative interviews, it is of key importance to use open-ended questions which refrain from any suggestions, contrary to structured interviews. Even though these hindered rapport, the use of a structured interview was needed to ensure all participants got the same structure of questions, allowing for a better replicability of the study.

Secondly, the non-significant results could be explained by the high overload of information that was presented to the participant before the interview took place. The procedural information could have in turn had the opposite effect, and instead of reducing the stress and uncertainty, it could have increased it. As stated by Mara et al (2020) and their Wafa framework, people with ASD might become overstimulated when presented with big chunks of information at once, or when asked to recall all information at once; this is due to their atypical sensory processing. Furthermore, according to Strömberg et al. (2022), autistic individuals tend to have lower-paced information processing than neurotypical individuals, meaning that they may require a longer time to comprehend all the information that is given to them before the interview. So instead of presenting all information at once, the information should be given in small chunks so they can free up some cognitive resources and allow for better recall and eventually lead to a smoother interaction.

Lastly, another reason for the non-significant results could be due to the context where rapport was established. According to Gabbert et al. (2020) rapport is established differently depending in the context that surrounds it. In one hand there is the social context, where the two parties get to interact freely as equals, without expecting any demands from the other (Gabbert et al., 2020). On the other hand, in a professional context it is more likely that one individual is purposefully trying to develop rapport with another, with a goal in mind. This is the case for investigative interviews, where there is a power imbalance between the interviewer and interviewee, as normally police officers want to establish rapport with solely the goal of solving the investigation (Gabbert et al., 2020). This can lead to the interviewees lacking the motivation to cooperate and therefore hinder the rapport established.

Limitations and future research

While this study can be used as a guideline for future research due to its replicability, there are some limitations that should be considered when performing the experiment in the future. One significant limitation is that the study consisted of 43 participants of which only ten of them were indicated as autistic. While the overall scores are still reliable, the sample does not represent the full population (Collins & Watt, 2021) and therefore including a larger sample of individuals with ASD would have improved the accuracy of the results. Based on what was concluded, the present study did not have enough power to show the effect predicted at the start of this paper. But given the importance of adapting the investigative interviewing process to people with ASD, future research needs to be done involving a higher and more varied sample of people with ASD.

Another important limitation to consider is the environment where the experiment was conducted, which consisted of different study rooms that varied depending on the availability at the time. For some of the participants, there was a high level of noise pollution,

which could have hindered the completion of the questionnaire or even increased the level of stress felt by the individual (Elwin et al., 2013). As stated by Normansell-Mossa et al. (2021), people with ASD experience loud noises and bright lights more intensely than neurotypicals, leading them to become more stressed and anxious. This in turn could have caused the individual with ASD to have a hard time focusing on the interviewer, therefore affecting the level of rapport felt during the interview. For future research it is important to have a controlled constant environment without significant noise pollution or high brightness levels. This will allow the individual with ASD to feel less sensory overload and allow for clearer thinking.

Finally, one last main limitation of this study regarding the case vignette should be considered. The case vignette explains the participants the situation they have to imagine themselves in. Participants with ASD can struggle with putting themselves in the given situation, due to their differences in mental processing. To support this, Conson et al. (2015) stated that people on the spectrum suffer of a series of limitations when it comes to them putting themselves in an outer situation. Having the participant not be fully immersed into the character role might have affected the way they acted and responded the questions during the interview, therefore affecting the relationship between both parties. In future scenarios, using a technological tool like virtual reality (VR) can increase the sense of immersion into the situation, allowing for a better simulation of border control. This could lead to individuals interpreting the situation a lot more serious and therefore allow for more reliable results.

In summary, this study highlighted the complexities involved in adapting investigative interviews for individuals with ASD and emphasizes the need for further research with larger, more representative samples. Addressing the limitations related to the sample size, environmental conditions, and the use of case vignettes can enhance the reliability and applicability of future findings. By refining these aspects, future studies can provide deeper

insights into optimizing interview techniques to better accommodate the needs of individuals with ASD

Conclusion

There has been a lot of research covering the effect of rapport on investigative interviews, but most of this research focuses on neurotypical individuals. This research aimed to investigate whether supplying procedural information would increase self-rated rapport on individuals with Autism Spectrum Disorder (ASD) through means of an investigative interview. This was done in order to find ways to adapt the investigative interviewing process to people with ASD, as they can perceive these interactions as more mentally and socially demanding than neurotypical individuals. Based on the literature study conducted at the start of this paper, the following research question was created “To what extent does giving procedural information to individuals with ASD increase the level of self-rated rapport felt during the investigative interview process compared to neurotypical individuals?”.

According to the ANOVA analysis performed, there was no difference between giving procedural information to people with ASD before the interview compared to not giving them any procedural information, and the same occurred for the neurotypical group. Nevertheless, there is a series of limitations to consider when applying this research in future scenarios like the low sample power, lack of immersion and inconsistent environment. With these limitations accounted for, the study can add important knowledge into the adaptation of investigative interviews for autistic people and it opens the door for testing further strategies that might aid people with ASD through the investigative interviewing process.

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Appendix A

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 many 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 B

Article on racial Identity



If I Survive You Jonathan Escoffery

Dazzling debut of racial identity

The second-person point of view risks being contrived, distracting, presumptuous, scratchy, puerile and self-conscious. Just don't do it, writing instructors warn. Unless you're Escoffery, a young American in whose hands the second person is arresting, intimate, adventurous, attuned, sophisticated and, yes, still self-conscious.



Biography

The Marriage Question
Clare Carlisle



Booker-shortlisted *If I Survive You* is a stylish debut of eight linked short stories set mostly in Miami during a recession. It advances in short, impressionistic scenes, and much like viewing a Seurat, you're lured in by the dazzling surface before needing to step back for relief. For the most part, the collection follows Trelawny, a racially ambiguous Black man, who is constantly served the question: "What are you?" His economic and romantic prospects are dim. He has no stable friendships. His family is a case study in marital estrangement, parental favouritism and sibling rivalry.



History

Uproar!
Alice Loxton

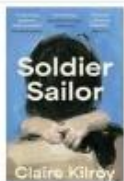


Fiction

Nothing Special
Nicole Flattery



Obviously, the second person brokers empathy between reader and character - you put yourself in Trelawny's shoes. Less obviously, because you essentially stands in for I, it confirms the estrangement Trelawny feels from himself. He cannot convincingly narrate from the I position because that would presume that he inhabits a self. It's a genius move, when you consider it. Escoffery could have been content to tell these stories in a straightforward way - they're weighty enough to hold our attention - but his exaggerated stylishness takes us beyond wan empathy to identification.



Fiction

Soldier Sailor
Claire Kilroy



Ian Williams

Appendix C

Rapport Scales for Investigative Interviews and Interrogations 2 (RS3i) Interviewee Version

Statement	Answer				
1. I think the Interviewer is generally honest with me.	SD	D	N	A	SA
2. The Interviewer did his/her job with skill during the interview.	SD	D	N	A	SA
3. The Interviewer respects my knowledge.	SD	D	N	A	SA
4. The Interviewer and I have our culture in common.	SD	D	N	A	SA
5. The Interviewer performed expertly during the interview.	SD	D	N	A	SA
6. I think that the Interviewer can generally be trusted to keep his/her word.	SD	D	N	A	SA
7. The Interviewer and I probably share the same ethnicity.	SD	D	N	A	SA
8. The Interviewer really listened to what I had to say.	SD	D	N	A	SA
9. I was motivated to perform well during the interview.	SD	D	N	A	SA
10. I feel I can trust the Interviewer to keep his/her word to me.	SD	D	N	A	SA
11. The Interviewer made an effort to do a good job.	SD	D	N	A	SA
12. The Interviewer acted like a professional.	SD	D	N	A	SA
13. The Interviewer paid careful attention to my opinion.	SD	D	N	A	SA
14. The Interviewer and I got along well during the interview.	SD	D	N	A	SA
15. The Interviewer and I worked well together as a team.	SD	D	N	A	SA
16. The Interviewer probably shares my culture.	SD	D	N	A	SA
17. I wanted to do a good job during the interview.	SD	D	N	A	SA
18. The Interviewer was attentive to me.	SD	D	N	A	SA
19. Communication went smoothly between the Interviewer and me.	SD	D	N	A	SA
20. The Interviewer was interested in my point of view.	SD	D	N	A	SA
21. I felt committed to accomplishing the goals of the interview.	SD	D	N	A	SA

Select SD if the statement is definitely false or if you **strongly disagree**.

Select D if the statement is mostly false or if you **disagree**.

Select N if the statement is about equally true or false, if you cannot decide, or if you are **neutral** about the statement.

Select A if the statement is mostly true or if you **agree**.

Select SA if the statement is definitely true or if you **strongly agree**.

Appendix D:

The Autism Spectrum Quotient

The Autistic-Spectrum Quotient

1. I prefer to do things with others rather than on my own.	definitely agree	slightly agree	slightly disagree	definitely disagree
2. I prefer to do things the same way over and over again.	definitely agree	slightly agree	slightly disagree	definitely disagree
3. If I try to imagine something, I find it very easy to create a picture in my mind.	definitely agree	slightly agree	slightly disagree	definitely disagree
4. I frequently get so strongly absorbed in one thing that I lose sight of other things.	definitely agree	slightly agree	slightly disagree	definitely disagree
5. I often notice small sounds when others do not.	definitely agree	slightly agree	slightly disagree	definitely disagree
6. I usually notice car number plates or similar strings of information.	definitely agree	slightly agree	slightly disagree	definitely disagree
7. Other people frequently tell me that what I've said is impolite, even though I think it is polite.	definitely agree	slightly agree	slightly disagree	definitely disagree
8. When I'm reading a story, I can easily imagine what the characters might look like.	definitely agree	slightly agree	slightly disagree	definitely disagree
9. I am fascinated by dates.	definitely agree	slightly agree	slightly disagree	definitely disagree
10. In a social group, I can easily keep track of several different people's conversations.	definitely agree	slightly agree	slightly disagree	definitely disagree
11. I find social situations easy.	definitely agree	slightly agree	slightly disagree	definitely disagree
12. I tend to notice details that others do not.	definitely agree	slightly agree	slightly disagree	definitely disagree
13. I would rather go to a library than a party.	definitely agree	slightly agree	slightly disagree	definitely disagree
14. I find making up stories easy.	definitely agree	slightly agree	slightly disagree	definitely disagree
15. I find myself drawn more strongly to people than to things.	definitely agree	slightly agree	slightly disagree	definitely disagree
16. I tend to have very strong interests, which I get upset about if I can't pursue.	definitely agree	slightly agree	slightly disagree	definitely disagree
17. I enjoy social chit-chat.	definitely agree	slightly agree	slightly disagree	definitely disagree
18. When I talk, it isn't always easy for others to get a word in edgeways.	definitely agree	slightly agree	slightly disagree	definitely disagree
19. I am fascinated by numbers.	definitely agree	slightly agree	slightly disagree	definitely disagree
20. When I'm reading a story, I find it difficult to work out the characters' intentions.	definitely agree	slightly agree	slightly disagree	definitely disagree
21. I don't particularly enjoy reading fiction.	definitely agree	slightly agree	slightly disagree	definitely disagree
22. I find it hard to make new friends.	definitely agree	slightly agree	slightly disagree	definitely disagree
23. I notice patterns in things all the time.	definitely agree	slightly agree	slightly disagree	definitely disagree
24. I would rather go to the theatre than a museum.	definitely agree	slightly agree	slightly disagree	definitely disagree
25. It does not upset me if my daily routine is disturbed.	definitely agree	slightly agree	slightly disagree	definitely disagree
26. I frequently find that I don't know how to keep a conversation going.	definitely agree	slightly agree	slightly disagree	definitely disagree
27. I find it easy to "read between the lines" when someone is talking to me.	definitely agree	slightly agree	slightly disagree	definitely disagree
28. I usually concentrate more on the whole picture, rather than the small details.	definitely agree	slightly agree	slightly disagree	definitely disagree
29. I am not very good at remembering phone numbers.	definitely agree	slightly agree	slightly disagree	definitely disagree
30. I don't usually notice small changes in a situation, or a person's appearance.	definitely agree	slightly agree	slightly disagree	definitely disagree
31. I know how to tell if someone listening to me is getting bored.	definitely agree	slightly agree	slightly disagree	definitely disagree
32. I find it easy to do more than one thing at once.	definitely agree	slightly agree	slightly disagree	definitely disagree
33. When I talk on the phone, I'm not sure when it's my turn to speak.	definitely agree	slightly agree	slightly disagree	definitely disagree
34. I enjoy doing things spontaneously.	definitely agree	slightly agree	slightly disagree	definitely disagree
35. I am often the last to understand the point of a joke.	definitely agree	slightly agree	slightly disagree	definitely disagree
36. I find it easy to work out what someone is thinking or feeling just by looking at their face.	definitely agree	slightly agree	slightly disagree	definitely disagree
37. If there is an interruption, I can switch back to what I was doing very quickly.	definitely agree	slightly agree	slightly disagree	definitely disagree
38. I am good at social chit-chat.	definitely agree	slightly agree	slightly disagree	definitely disagree
39. People often tell me that I keep going on and on about the same thing.	definitely agree	slightly agree	slightly disagree	definitely disagree
40. When I was young, I used to enjoy playing games involving pretending with other children.	definitely agree	slightly agree	slightly disagree	definitely disagree
41. I like to collect information about categories of things (e.g. types of car, types of bird, types of train, types of plant, etc.).	definitely agree	slightly agree	slightly disagree	definitely disagree
42. I find it difficult to imagine what it would be like to be someone else.	definitely agree	slightly agree	slightly disagree	definitely disagree
43. I like to plan any activities I participate in carefully.	definitely agree	slightly agree	slightly disagree	definitely disagree
44. I enjoy social occasions.	definitely agree	slightly agree	slightly disagree	definitely disagree
45. I find it difficult to work out people's intentions.	definitely agree	slightly agree	slightly disagree	definitely disagree
46. New situations make me anxious.	definitely agree	slightly agree	slightly disagree	definitely disagree
47. I enjoy meeting new people.	definitely agree	slightly agree	slightly disagree	definitely disagree
48. I am a good diplomat.	definitely agree	slightly agree	slightly disagree	definitely disagree
49. I am not very good at remembering people's date of birth.	definitely agree	slightly agree	slightly disagree	definitely disagree
50. I find it very easy to play games with children that involve pretending.	definitely agree	slightly agree	slightly disagree	definitely disagree

Appendix E

Layout of the bag and its items



Appendix F

Case vignette pictures

Slide 1



Please
imagine
yourself in
the following
situation...

Slide 2



You were traveling with
your close friend, Anne
Hastings (20), to Spain.
You were staying in a
Hostel in Madrid and
enjoyed 4 days
together.

Slide 3

You spend
most of your
days in
Madrid
sightseeing...



Plaza de Cibeles



Puerta del Sol



Gran Vía



Prado Museum

Slide 4

... and trying
local food
and bars.



... and trying local food and bars.

Slide 5

Now you are on
your way back,
alone, as Anne
took an earlier
flight to Tenerife,
Canary Islands,
yesterday to visit
her grandparents
who are there on
an 8 weeks winter
break.

Slide 6

Your last day in Madrid, you
spent alone wandering
through town and visiting the
local markets.

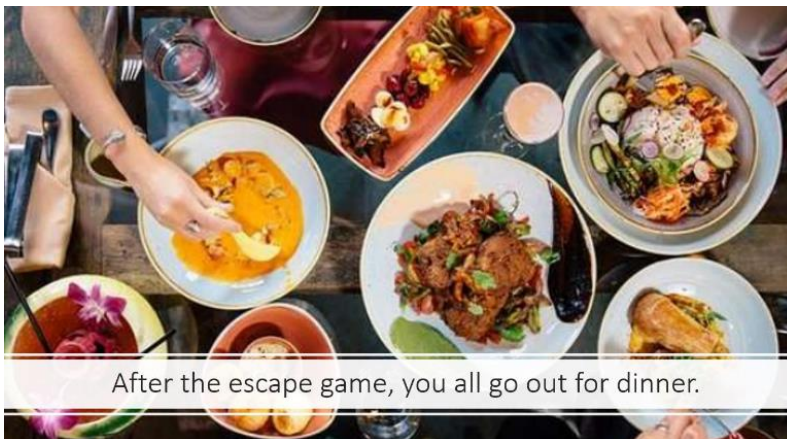
You stop at your favourite
pastry shop for a treat.

Slide 7

Back in the hostel, you meet Christian, Marco and Sofie, who you made friends with over the last couple of days.

They are on their way to an Escape Room and ask you if you would like to join.

Together you go to “Fox In A Box”.

Slide 8

After the escape game, you all go out for dinner.

Slide 9

After dinner, you pack your bag because next morning you are flying back to Enschede via Schiphol Airport.



Appendix G

Investigative interview structure

“Engage and Explain”	“Accusatory”
<p>Hello, I want to talk to you about your luggage.</p> <p>I need to establish whether you brought any illegal items to the Netherlands. This could have severe consequences such as a fine or even imprisonment depending on the item. But, let’s talk first.</p> <p>Before we start I just want to go over some ground rules for today.</p> <p>For your protection and for mine I will record this so we get a full account of what was said today.</p> <p>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.</p> <p>Do you have any questions so far?</p> <p>OK, so we’ll begin the interview now.</p>	
<ul style="list-style-type: none"> ▪ Where did you travel from into the NL? ▪ What where you traveling for? ▪ Whom did you spend your holiday? ▪ Where is she now? ▪ Where do you live in the NL? <p>[Pointing at the bag.]</p> <ul style="list-style-type: none"> ▪ Is this your bag? ▪ How many pieces of luggage do you have to be checked-in? ▪ Did you pack your luggage yourself or did somebody help you? ▪ Did you, at any point, leave your baggage unattended? ▪ Did anybody ask you to carry anything for them? ▪ 	
<ul style="list-style-type: none"> ▪ Please tell me everything that you did since you packed your bag. ▪ Please tell me in as much detail as possible what you packed. ▪ Please tell me if there are any goods, you need to declare. ▪ What else can you tell me? ▪ Would it be okay for you if we check your bag? <p>Thank you that is all I need to know for now.</p>	

Appendix H

Informed consent

Purpose

This research aims to explore human behaviour in situations involving information exchange and communication dynamics at border control. By studying these interactions, we hope to gain insight into how individuals respond and feel about certain prompts.

Procedure

As a participant in this study, you will be asked to imagine you have been on a short holiday with a friend. You pack your bags and head back to the airport. At the airport a police officer might have a look at your bags. After you pass security, we ask you to fill in a questionnaire about your experience. At any point during the experiment, there will be a researcher present should you have questions or remarks. 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.

Confidentiality

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. The anonymous research material must be stored for up to 10 years before it is deleted, in line with data management policy designed to ensure the accountability of scientific research.

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 later, please email the principal investigator 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, ethicscommitteebms@utwente.nl

For further information about this study, contact the researcher Yasmin Saciri, y.saciri@student.utwente.nl

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,

Appendix I

In order to check whether removing the outliers from the dataset would affect the results, another ANOVA analysis was carried out. These showed that removing the outliers did affect the dataset, as can be seen by the significantly bigger F values for autism diagnosis $F(1,36) = 0.88, p = 0.35$ and procedural information $F(1,36) = 1.29, p = 0.26$ groups, while the opposite occurred for the procedural information group $F(1,36) = 0.19, p = 0.66$. Although removing the outliers did change the dataset, there was still no significant difference between any of the groups.

Table 2

ANOVA table displaying the effects of autism diagnosis, Procedural information and the interaction between Diagnosis and Procedural on self-rated rapport after outliers removed.

	Df	F value	Pr (>F)
autism diagnosis	1	0.88	0.35
procedural information	1	0.19	0.66
autism diagnosis & procedural information	1	1.29	0.26
residuals	36		