The Impact of Communication Errors on Interviewer Feelings of Stress and Shame

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Abstract

This study investigates the effects of error making in the context of human resources interviews. The goal of this study is to find out whether interviewer levels of perceived stress and shame after committing a factual error will be higher compared to a no error group in which interviewers did not commit an error. Moreover, it is researched whether the motive of either accidental or deliberate insider threat has an impact on the levels of perceived stress and shame. Additionally, it is hypothesized that levels of stress and shame can predict the behavioural response after making an error. This experimental study consisted of a 2 (error type: error vs no error) x 2 (motive: deliberate vs accidental) between-subjects design, in which participants were randomly assigned to the conditions. Participants were conducting an interview with a suspect who deliberately or accidentally lost information. In the error condition, the interviewer was tricked into making an error, whereas in the no error group no error was made. The participants then filled in two questionnaires to assess their perceived levels of stress and shame. The results showed no significant differences of stress and shame from the error group and no error group and the motive also had no significant effect on the sample. Moreover, stress and shame could not predict the behavioural response. Therefore, this paper provides that individuals do not perceive more stress and shame after making an error in an interviewer context. Nevertheless, future research needs to be conducted in order to accept or reject the current findings of this study.

Keywords: Communication Error, Insider Threat, Stress, Shame

Communication Errors

Errors in communication can have extensive effects on both the sender and the receiver of a message. Especially high stakes situations like police interviews or crisis negotiations can be negatively affected by communication errors. Often, research emphasized positive relations in communication like the role of building rapport (Collins & Carthy, 2019; Jorgenson, 1992) but not so much research was conducted regarding the negative effects of communication errors (Oostinga et al., 2020). However, there are some exceptions to this like research by Oostinga et al. (2020), which showed that error making can have psychological effects on the maker of errors. First, the research showed that communication errors in an interviewer setting lead to more stress and shame in dutch police officers after committing an error compared to police officers who did not make an error. Moreover, it was found that the officers strategy of responding differed after committing an error.

In order to see whether these results can also be applicable to a non-law enforcement context, this study was set up to see whether communication errors lead to more perceived stress and shame when committing an error in an interviewer setting in the context of insider threat. Furthermore, it is investigated whether the motive of the suspect of insider threat will make a difference on the perceived stress and shame on interviewers who committed an error. Additionally to their findings, in this study it is researched whether stress and shame can predict which type of response people will use after committing an error. As errors in communication are often unavoidable, it is necessary to find out whether the same results can be achieved in this study. In case the same results are achieved, future research needs to focus on how to react accordingly to the error in order to not harm the relationship of interviewer and interviewee.

Furthermore, when it is possible to understand a person's internal state after committing an error, it is then easier to direct future research on how to correctly cope with these feelings.

Insider Threat

The case of Edward Snowden gained massive attention in 2013 when he deliberately leaked approximately two million private documents while working for the National Security Agency and is one of the most famous cases of insider threat. An insider can be defined as 'a person who exploits, or has the intention to exploit, their legitimate access to an organisation's assets for unauthorised purposes.' (CPNI, 2013, p. 4). However, insider attacks can also be accidental as a case from the USA showed. An accounts manager downloaded more than 6000 patients' data on a stick which she then accidentally lost (Elmrabit et al., 2015). Traditionally, cyber security places emphasis on how to protect oneself or one's company from malicious attacks from the outside. However, research has shown that insider threat poses more threat to an organisation than external threat (Lynch, 2006). Furthermore, according to research by Clearswift (2013), 58% of security incidents came from the inside, rather than from the outside of an organisation.

Types of Insider Threat

Individuals who commit insider threats can have multiple motivations and different types of insider exist. For this study, the deliberate and the accidental type of insider threat will be further investigated. The deliberate type refers to an insider who is a current or was a former trusted employee who intentionally misused their access to data of a company (Glasser & Lindauer, 2013). Often their motivation to deliberately misuse their privileged access is due to

selfish reasons, like revenge or financial gain (Nurse et al., 2014). The case of Edward Snowden in the section above refers to the deliberate type of insider threat. On the other hand is the accidental type that is characterized by an employee who acts carelessly with information of a company which leads to accidental loss or disclosure. The above mentioned case of the accounts manager who lost patients' data is an example of the accidental type of insider threat. Regarding unintentional insiders, research has shown that accidental incidents of insider threat arise when the insider has a poor understanding of their company's security policy, no security awareness, works under high pressure and stress or uses drugs (Buckley et al., 2014; Greitzer et al., 2014). The causes and the results of such accidental or malicious attacks are far-reaching and are usually investigated by Human Resource professionals of a company. When investigating insider threats, there are multiple modes of investigation. One of the possibilities in such a process is to make use of investigative interviews.

Investigative Interviews

When crimes are explored, investigative interviews can be conducted in order to obtain evidence or information from a suspect involved in a crime. The method of investigative interviews focuses on the communication process to achieve the best possible quality of data. Next to gathering information from eyewitnesses or collecting physical evidence, which are important components of crime investigation, interviewing potential witnesses of the crime is essential. Investigative interviews focus on the interview with anyone involved in the investigation process such as witnesses, victims, suspects, or even the police officer who arrived first at the crime scene (Milne & Powell, 2010). The fundamental objective of an investigative interview is to get only the most important information out of the mind of the suspect who is

interviewed (Vrij et al., 2014). Usually, there are two main questions which need to be answered. First, investigators need to find out what happened and if anything actually happened then the next step is to find out who did what. Based on that, investigators need to collect information which always comes from other people. Resulting from that, one of the main skills an investigator needs to possess is to properly conduct an interview. However, it is often unavoidable that errors occur during the process of an investigative interview. Therefore, it is important to acknowledge these errors in order to be able to react accordingly to them.

Errors in Investigative Interviewing

In order to create a trusting relationship with the insider, the making of errors should be viewed with caution as they can harm the rapport of the suspect and the investigator and can impair cooperation (Oostinga et al., 2018). Nonetheless, as errors may occur naturally in a conversation it is important to adequately respond to that error as the negative consequences of that may then be resolved. When interviewers do not effectively respond to their error making, then this will damage the relationship between interviewer and interviewee. However, a study by Oostinga et al. (2020) showed that different types of error making evokes different kinds of reactions in an interviewer context. For that, three different kinds of errors were identified, which are useful to distinguish: factual, judgment, and contextual errors. Factual errors refer to spelling mistakes, incorrect information, such as using a wrong name or date, or to an incorrect number or calculation. Judgment errors indicate the misrepresentation of feelings of a receiver, or when the interviewer makes an inappropriate joke because the social or ethical circumstances of the message are not fitting in the context. Lastly, contextual errors take place when something goes incorrect on the interviewer side, like material which is defective and that causes to hinder

communication. As the first two errors refer to actions which are taken by the interviewer, instead of the method, this study will focus on these types of errors. To be precise, this study focuses on factual errors as research by Oostinga et al. (2020) showed that factual errors lead to more negative effects in suspect interviews compared to judgment errors.

Response Strategies

When interviewers commit errors in interview settings, there are several different response strategies identified which are often used. Research by Oostinga et al. (2018, 2020) identified six different response strategies which were also implemented into this study. These are Contradict, Apologize, Exploration, Accept, No Alignment and Deflect. Interviewers were classified as Contradict when they were denying any responsibility after committing an error. Moreover, when an interviewer was using Apologize, then they were taking responsibility and were apologizing for their mistake. Exploration refers to an exploratory response in the form of a question. Furthermore, Accept refers to admitting and accepting that an error has been made. No Alignment was classified as a response which was completely unrelated and not regarding the current issue. Finally, Deflect relates to a question or an answer in the form of a remark in which guilt is shifted to someone else.

However, when people are in stressful situations, it is likely that they do not have enough capacity left to think about their possible consequences when responding. Moreover, literature proposes that individuals who make an error will be cognitively disrupted (Dimitrova et. al., 2015). This can be explained due to the reason that the individual will be distracted by the error and focus their attention onto this error. In turn the relationship between interviewer and suspect can be impaired as the focus of the error maker shifts away from their task onto the error and the

resulting feelings. This error could then cause the individual, who committed the error, to think about why they did the error, if they could avoid it, or what possible impact this might have on their counterpart (Oostinga et al., 2018). This in turn may affect their possibility to respond adequately to their counterpart. Therefore, instead of trying to focus on not making an error at all, it is important that interviewers are able to adapt to their errors and be flexible so that they can come up with a fitting solution.

Errors and Insider Threat Motive

When people are confronted with someone who behaves morally wrong, they usually moderate their responses based on their assumptions about that person. Interestingly, research by Cushman (2008) showed that individuals usually perceive intentional harm to be worse than accidental harm. Therefore, it can be expected that people, who believe that an insider acted intentionally to harm someone, will judge them more harshly than an insider who accidentally harmed someone. Moreover, other research by Parkinson and Byrne (2018) has shown that people judge others who intentionally disobey moral principles, as more morally wrong as someone who accidentally disrupts the same moral principle. Concluding from these findings it is possible that interviewers who believe that a suspect harmed someone deliberately, will try to shift the blame after committing an error onto the suspect or deny their mistake as they unconsciously judge them more strictly. Moreover, when people are confronted with individuals who did something deliberately wrong, they may act biased and will have little sympathy for them. A result of these feelings may be that interviewers experience less stress and shame when making an error in front of the suspect. On the other hand, it might be expected that interviewers who believe that a suspect harmed someone accidentally, will react in an understandable way

and take responsibility or even apologize for their mistake. Reason for that might be that individuals do not deal severely with people who accidentally commit errors and will therefore react in a more friendly manner. Furthermore, as people usually have empathy with others who accidentally harm someone and view them as less mean (Decety et al., 2012), it is likely that they will feel more stress and shame in an interview after making an error in front of the suspect. Resulting from that, it is hypothesized that individuals who committed an error and who believe an insider harmed a company intentionally, will make use of the Contradict or Deflect response strategy mentioned above. Contrary, it is expected that individuals, who believe that an insider did so accidentally, will react to their error making with the Accept or Apologize response.

Stress and Shame

As stated in the beginning of this paper, the study by Oostinga et al. (2020) found that committing communication errors by the interviewer produces more stress and shame and affects the interviewer to alter their kind of response after making the error. To be more precise, they identified that less stress led interviewers to make use of an Apologize response, whereas more stress was linked to using the Exploration response. Moreover, important findings in interview settings regarding errors are that especially factual errors seem to strongly influence a person's feelings as they lead to slightly more distraction, higher levels of stress and more shame. Therefore, in this study stress serves as a dependent variable as well as a predictor variable.

Furthermore, Oostinga et al. (2020) found out that interviewers who committed an error perceived more shame compared to those who did not make an error. Shame is an emotional reaction to negative experiences such as the making of errors, the experience of maltreatment and being wrong (Bynum & Goodie, 2014). To experience shame, an individual first needs to

acknowledge that they did something wrong or that they are going to do something wrong. Research by Tangney et al. (2007) has shown that when an individual experiences a shameful situation, this person will likely conduct defensive actions like hiding, denying, or escaping this shameful situation. In order to answer the research question, shame serves as a dependent, as well as a predictor variable in this study.

As a result, this study will focus on the interviewers' feelings of stress and shame after committing a factual error compared to a control group who does not commit an error. Resulting from the research about how motive influences perception (Cushman, 2008), it is also expected that interviewers who believe that an individual acted intentionally to harm someone will experience less stress and shame after committing a mistake in front of them. Contrary, individuals who believe that an individual accidentally harmed someone will perceive more stress and shame after making a mistake in front of them.

Research Question

The research question was formulated as follows: What are the impacts of a factual error on an interviewer's feelings of shame and stress?

H_1: Interviewers who make a factual error in the investigative interview will perceive a higher level of shame than interviewers in the control group who do not make an error.

H_2: Interviewers who make a factual error in the investigative interview will perceive a higher level of stress than interviewers in the control group who do not make an error.

H_3: Interviewers who make a factual error in the investigative interview and who believe that the suspect accidentally leaked information will experience a higher level of shame compared to interviewers who also make an error but believe that the suspect did it deliberately.

H_4: Interviewers who make a factual error in the investigative interview and who believe that the suspect accidentally leaked information will experience a higher level of stress compared to interviewers who also make an error but believe that the suspect did it deliberately.

H_5: Does less stress in the interviewer predict a greater usage of the response strategy Apologize in the investigative interview?

H_6: Does more stress in the interviewer predict a greater usage of the response strategy Exploration in the investigative interview?

H_7: Does more shame in the interviewer predict a greater usage of the response strategy Denial in the investigative interview?

Methods

Design

This experimental study consisted of a 2 (error Type: factual error vs. no error) x 2 (motive: deliberate vs. accidental) between-subjects design, in which participants were randomly allocated to one error type and one motive condition. The independent variable of insider threat included an interviewer script for each condition. In these scripts, participants are asked to imagine themselves as an interviewer who explores the given situation of insider threat by asking diverse background questions. The dependent variables were perceived “stress”, “shame” and the “behavioural response”.

Participants

This study made use of convenience sampling to collect participants. For this, the platform SONA was employed. SONA systems is a participant pool management software which

enables gathering of participants. Moreover, participants were gathered by the social networks of the researchers. When participating through SONA, students could earn 0.5 course credits for participating. In total, 116 people participated. To be eligible for participation, participants had to sign an online informed consent form, had to be able to speak and understand English in order to conduct the interview and be at least 18 years of age or older.

Four participants were excluded because either the participant failed to commit the error in the investigative interview, or the researcher failed to respond adequately to the committed error. From the 112 participants, 54 were randomly assigned to the factual error group while 58 were randomly assigned to the no error group. Furthermore, 54 were also randomly assigned to the accidental motive condition and 58 to the deliberate motive condition. Of the remaining 112 participants, 58 were female (51.8%), 52 male (46.4%), and 2 identified with no gender (1.8%). Further, participants had different nationalities (Dutch = 72, German = 31, Other = 9) and their age ranged between 18 and 67 (M = 23.7, SD = 7.7). Additionally, the sample mostly consisted of students as their current educational level showed (Bachelor = 76, Master = 17, Other = 19).

Materials

In order to measure the dependent variables, a survey in Qualtrics was created. The scales in that survey measured the variables of stress and shame. Moreover, participants were divided into groups depending on the motive of the suspect.

Questionnaires

Shame. To assess the experience of shame, the State Shame and Guilt Scale (SSGS) was employed (Marschall, Sanftner, & Tangney, 1994 as cited in Cavalera, Pepe, Zurloni, Diana, & Realdon, 2017). The scale consisted of 15 items that were equally distributed between guilt,

shame and pride. For the purpose of this study only the shame subscale was used, which consisted of 5 items. Each item had to be answered on a 5-point Likert scale ranging from 1 (*not feeling this way at all*) to 5 (*feeling this way very strongly*). The participant was instructed to answer the items based on how they were feeling after committing the factual error. Items of the shame subscale were for instance "I feel small" and "I feel humiliated, disgraced" (Cavalera et al., 2017). In this sample, the shame subscale reached good reliability with a Cronbachs' alpha of .87 (Gliem & Gliem, 2003).

Stress. In order to measure perceived stress of individuals, the Dundee Stress State Questionnaire (DSSQ) was used (Matthews et al., 2002). The scale consisted of 30 items which had to be answered on a 5-point Likert scale ranging from 1 (*Definitely false*) to 5 (*Definitely true*). Participants had to indicate how they were feeling after being confronted with mentioning the missing USB stick. Items on the DSSQ were for example "I found it hard to keep my concentration on the task." or "I felt confident about my performance.". The sample showed a Cronbach's alpha of .88 which is considered good (Gliem & Gliem, 2003).

Interviewer Scenario. There were two versions of the "Interviewer Scenario", a scenario for the 'deliberate motive' scenario (see Appendix A) and one for the 'accidental motive' scenario (see Appendix B). In both versions, the participant was asked to "*Imagine yourself in the following scenario, and try to act as realistically as possible.".* The scenario first described the participants role as a human resource professional who is working for the company Volkswagen and who, as part of their job, also conducts investigative interviews with employees who are suspected of having violated company policies. The text continued by stating that a manager of the design department contacted them about an employee called Alex Baker who the participants are supposed to interview. As the interviewees, which were portrayed by the

researchers, consisted of two males and two females, the gender neutral first name “Alex” was chosen for the roleplay. The manager states that a rival company had published a model of car headlights that are very similar to a design Alex and the team at Volkswagen had been working on. Further, the company notices that Alex Baker was the last person who used the missing hard drive containing these sketches.

In both conditions, after this information was a short paragraph about evidence the interviewer could use and a few example questions were provided in order to guide the interviewer through the interview. The information given in the evidence section and the provided question was the same in both conditions. However, the conclusion drawn from the evidence was dependent on the condition participants were in. In both conditions, participants were provided with evidence such as “Mr(s). Baker had several discussions with the manager about being dissatisfied with their pay grade, however all requests for an increased pay were denied.” and “You hear from a colleague that Alex Baker has considered quitting the job in the past, but has not yet done so.”. Depending on which motive condition the participant was assigned to, the conclusion was then drawn as either “Based on this information you believe that Mr(s). Baker has accidentally misplaced or lost the USB stick, which could give someone else the chance to copy the design or take the stick with them.” in the accidental motive condition or “Based on this information you believe that Mr(s). Baker has given the USB-stick to a rival company.” in the deliberate motive condition. Additionally, participants were provided with example questions they could use during the interview. Examples of questions during both conditions are “At the beginning of the interview, check the background information of the employee that was stated above (e.g. their name, age, job and tasks)” and **“**What did the

employee do on the day the USB stick went missing?". Again further questions are added such as: "Was there a change in their usual routine that day?".

In order to see whether participants believed that the suspect was either deliberately or accidentally harming the company, an error manipulation check was established. After conducting the interview, the participants had to answer the question "What was your first impression of the suspect's motive?", which could be answered by marking one of four different options. The first option was that the suspect was innocent. The second option stated that the suspect had deliberately provided the competitor with information. The third option was that the suspect had accidentally lost the information. Finally, the last option indicated that the participant could not reach a conclusion regarding the motive of the suspect.

Behavioural Response. In order to code the different responses of the participants, six different codes were used by the research team, which were based on already existing codes (Oostina et al., 2018, 2020). The six codes identified by Oostinga et al. (2018, 2020) were: Deflect, No Alignment, Apologize, Exploration, Contradiction and Acceptance . However, in order to assess whether shame can predict a negative behavioural response by the participants who committed an error, the code "Denial" was also added to this study, which was the sum of "Deflect" and "Contradiction". This was done as "Deflect" and "Contradiction" both indicate that the person is not taking responsibility for their error making and both can be seen as a negative behavioural response. Therefore, the full codes were: 1. Deflect, 2. No Alignment, 3. Apologize, 4. Exploration, 5. Contradiction, 6. Acceptance, 7. Denial.

A response of a participant was coded as Deflect when they were responding in the form of a remark and deflected the mistake back on the interviewee. Moreover, participants were coded as No Alignment when they said something off-topic. Researchers made use of the code

Apologize when participants were apologizing for their mistake. Furthermore, Exploration referred to when the interviewer is asking a question and tries to find out more details about the missing object. Participants were coded as Contradiction when they were contradicting and for example referred back to the USB stick instead of the tablet. Finally, the code Acceptance was used when the participant agreed and complied with what the suspect said. Following are some examples of responses used by the participants after making an error in the interview: “I thought this was about the USB.” (Deflect), “What missing tablet exactly?” (Exploration), “That is not correct, it is about the missing USB stick.” (Contradiction), “Yes, okay.” (Acceptance). The other codes were not used by the participants.

After establishing these codes, the research team divided participants into two evenly sized groups and two researchers for each group coded them individually by watching the recordings of the interviews. Every researcher coded the spoken words of the participants as a main response and if possible as a second response. A main response referred to the most prominent statement of the interviewer. In the case that a participant made use of a secondary response which was not as obvious as the first response, it was coded as a second response. Only the first and initial response by the participant after the standardized answer of the interviewee was taken into account when coding. After the coding process, the inter-rater reliability was calculated and showed substantial agreement with Cohen's Kappa of .65 for the main responses and fair agreement for the second strategy coding with Cohen’s Kappa of .30 (Landis & Koch, 1977). Based on the low score for the secondary strategies, it was decided that they were excluded for this study. After that, the remaining disagreements were discussed and a final coding scheme was created. In order to negate any confirmation bias, researchers coded without the knowledge of the codes of the other researchers.

Procedure

Before the publication of the study on SONA, approval of the BMS Ethics Committee of the University of Twente was requested and accepted. In order to avoid biased responses, participants of the study were randomly assigned. Before the start of the study, participants were evenly distributed among the four random conditions using the randomisation procedures in Excel.

The participants were assigned to certain time slots and were able to join the first researcher via Microsoft Teams where they could see and hear each other via their webcams. There, the first researcher provided the participant with the weblink to the survey. At the beginning of the study, participants were asked to give informed consent. The informed consent form clarified that participation is voluntary, and that they could stop at any moment. After completion of the consent form, the participants had to fill out questions focused on the demographics. Subsequently, they were provided with the randomly assigned scenario, in which the motive (deliberate vs accidental) of the suspect was described. After reading the interviewer scenario, they had a few minutes to prepare for the interview, but they were not allowed to make notes. When they were finished, the second researcher (i.e. the interviewee) joined the call. Before the beginning of the interview via Microsoft Teams the first researcher left the call. Usually, the interview would have been conducted face to face but due to the current COVID19 pandemic, this study has been conducted online. In this setting the interviewer and interviewee were in direct contact via their webcams and microphones which allowed the recording of the conversation without disturbing the conversation, and enabled coding what was being said at a later stage.

Before the interview was conducted, the interviewee was instructed to respond to having last used the USB stick differently depending on the condition the participant was assigned to. In the non-error condition, the suspect was supposed to act as if she/he knew about the missing USB stick by saying "*Yes, I heard there was a USB stick missing"*. In this condition the interviewee continued with the conversation and did not obstruct the continuation of the interview. If the participant was assigned to the error-condition, the suspect was instructed to respond somewhat offended and surprised when being confronted with the lost USB stick. In this condition the interviewee was supposed to object and respond with *"I thought this interview was about the missing tablet?".* Then, after the interviewer had responded, the interviewee followed-up with "*The design department's tablet containing all of its vital sketches is missing, not a USB stick'*. This way the participants were supposed to feel like having used the incorrect object. This set-up was used because it allowed for the use of standardized responses to the error making. Moreover, this wording ensured that the error was always made.

Lastly, besides the responses during the error-making, the interviewee also made use of standardized answers whenever applicable. For example, when asked about the current pay grade, the interviewee always answered with *'Although I am not really paid [*50.000 *Euro] what I am worth, I am content with it*.". In order to uphold the presumed motive effect, in both conditions, the interviewee denied involvement. This way the participants were given no conclusive evidence and could only rely on their own assumption about the suspect's guilt. Regardless of whether an error was made, each interview was ended after approximately 5 minutes by the researcher entering the call, in order for the interviews to be comparable during analysis. After the interview, participants filled out a post-questionnaire and a debrief form which explained the real intention of the study (see Appendix C).

Data Analysis

For the data analysis, the program SPSS version 26 was used. First, it was hypothesized that perceived levels of stress and shame of participants of the factual error group will be higher than the stress and shame levels of the no error group. Moreover, it was hypothesized whether interviewers in the accidental motive condition perceived a higher level of stress and shame compared to the deliberate motive condition. In order to analyze these hypotheses two two-way ANOVAs were used to compare the means of the two groups while checking whether both independent variables had an effect on the dependent variables of stress and shame. First, the samples of the analysis needed to be normally distributed which was checked with the Kolmogorov-Smirnov and Shapiro-Wilktest. Moreover, the variances of the sample needed to be equally distributed which was measured by using a Levene's test. Moreover, in order to see whether stress predicts the usage of the behavioural response of "Apologize" and "Exploration", a binary logistic regression was used. Finally, it was researched whether shame can predict the usage of the behaviour response of "Denial" by the means of a binary logistic regression.

Results

In the beginning, descriptive statistics of the dependent variables stress and shame were computed. Regarding the dependent variable stress, the mean score of the factual error group (M = 2.68, SD = 0.34) as well as the mean score of the no error group (M = 2.72, SD = 0.36) was moderate. With respect to the dependent variable shame, the mean score of the factual error group and the no error group was low, with scores of respectively, 1.67 (SD = 0.85) and 1.48 (SD

= 0.69). The sample was normally distributed as the Kolmogorov-Smirnov and Shapiro-Wilk tests showed. Moreover, Levene's test showed that all four groups had equal variances.

Stress

A two-way ANOVA was conducted in order to compare the main effects of motive and error type and the interaction effect between motive and error type on perceived stress (H_2, H_4). Motive consisted of two levels (accidental, deliberate) and error type also consisted of two levels (factual error, no error). None of the effects were significant at the .05 significance level. The main effect for motive revealed $F(1, 108) = 0.41$, $p = .52$ which indicated no significant effect between the accidental motive ($M = 2.68$, $SD = 0.36$) and the deliberate motive ($M = 2.72$, $SD = 0.34$). Moreover, the main effect of the error type showed $F(1, 108) = 0.41$, $p = .53$ indicating that there was no significant effect of error type, factual error ($M = 2.68$, $SD = 0.34$), no error ($M = 2.74$, $SD = 0.36$). The interaction effect was also not significant $F(1, 108) = 0.01$, $p = .93$.

Shame

Similarly, a two-way ANOVA was conducted in order to compare the main effects of motive and error type and the interaction effect between motive and error type on perceived shame (H_1, H_3). This two-way ANOVA also showed no significant effects at the .05 significance level. The main effect of motive showed $F(1, 108) = 1$, $p = .32$ which indicated no significant effect between the accidental motive ($M = 1.65$, $SD = 0.87$) and the deliberate motive ($M = 1.51$, $SD = 0.67$). Also, the main effect of the error type was $F(1, 108) = 1.77$, $p = .19$ which shows that there was no significant effect of error type, factual error ($M = 1.67$, $SD = 0.85$), no error ($M = 1.48$, $SD = 0.69$). Finally the interaction effect was not significant $F(1, 108) = 0.17$, $p = .68$).

Behavioural Responses

Out of the 54 participants who were in the factual error group and therefore also responded to the error making, the most prominent one was "Contradiction" (n = 28) followed by "Deflect" (n = 13), "Exploration" (n = 12) and "Acceptance" (n = 1). "No Alignment" as well as "Apologize", was not used once by the participants as a first response.

As none of the participants made use of the behavioural response "Apologize", a binary logistic regression could not be conducted to check whether stress can predict if participants will use this behavioural response (H_5).

A binary logistic regression was conducted in order to see whether stress can predict if participants made use of the behavioural response of "Exploration" (H_6). The Hosmer-Lemeshow goodness-of-fit was not significant ($p > .05$) which means that the model is correctly specified. However, the model showed that the predictor variable of stress was not significant (B = 1.35, SE = 1, $p > .05$).

In order to test whether shame can predict if participants made use of the behavioural response of "Denial" a binary logistic regression was conducted (H_7). First, the Hosmer-Lemeshow goodness-of-fit was significant ($p < .05$) indicating that the model is not correctly specified. Moreover, the model showed that the predictor variable of shame was not significant (B = .14, SE = .41, $p > .05$).

Error Manipulation Check

In order to see whether the error manipulation check worked, a Chi-square test was conducted. However, as one of the assumptions was violated, the first option, that people think the suspect is innocent, had to be deleted. After that, the outcome showed a significant effect

between the motive of the suspect given to the participants and the perceived motive of the suspect by the participants, X^2 (2, N = 103) = 7,45, p = .02.

Discussion

Results and Limitations

The purpose of this study was to find out whether interviewers who make a factual error will perceive a higher level of shame and stress than interviewers in the no error group who do not make an error. Moreover, it was researched whether interviewers who believe that the suspect accidentally leaked information will experience a higher level of stress and shame compared to interviewers who believe that the suspect did it purposefully. Finally, it was researched whether the level of shame and stress can be predictors for the behaviour responses of "Denial", "Exploration" and "Apologize" of the interviewers after committing a factual error.

First, the results revealed that there was no significant difference in the level of experienced shame and stress. Therefore, the first and the second hypothesis, that there are higher levels of shame and stress in interviewers who made a factual error compared to interviewers who did not make an error, need to be rejected. Overall, it can be observed that the shame levels of all participants in the factual error group as well as in the no error group was quite low. Moreover, the stress levels were moderate for the error group and for the no error group. As a result, it can be concluded that committing factual errors did not evoke much shame in the participants. Moreover, it seems as if the participants perceived the making of an error as moderately stressful.

A reason for these obtained results could lie in the limitation, that the interviewers did not commit the error by themselves, but they were rather instructed to make this error. As they were

given information beforehand, it is possible that they did not feel like actually making this error as they were reading about certain information just minutes before the interview and therefore, they were feeling maybe more confused than stressed or ashamed. Another Limitation explaining the results could be that in the study by Oostinga et al. (2020), professional dutch police officers were tested, who are qualified and extra specialized on these kinds of interviews. Resulting from their expertise, it is very likely that they did not feel confused in their interview, contrary to the sample in this study. As this study sample mostly consisted of students who did not have any experience nor training as an interviewer, the initial position was completely different from the samples. Trained police officers are aware of the grievous consequences that the making of errors in high stakes situations can evoke. Moreover, they are aware that they cannot perform poorly in such important situations as they cannot take such high risks and therefore act differently, even when they are not confronted with a real situation. Contrary, students who took part in this study probably were not aware of or did not care so much about the consequences in this study, as there was nothing at risk for them. They are not trained and do not find themselves often in these kinds of interview situations. In future research, it could be interesting to identify whether the experience of participants will make a difference in perceiving stress or shame after making an error or whether it is more important to be aware of possible consequences of making errors in interviews.

Second, there was no difference in levels of stress and shame in interviewers after committing an error, independent of whether they thought that the suspect deliberately or accidentally harmed the company. Thus, the third and the fourth hypothesis also need to be rejected. Interestingly, the error manipulation check was significant which indicated that the error manipulation check worked. Thus, interviewers could identify whether the suspect's motive

was either to deliberately or accidentally harm the company. However, the results showed that the perceived motive did not influence the level of stress and shame of the participants. It needs to be concluded that the motive did not have an impact on the stress and shame level of participants. A reason for that outcome could be that interviewers actually did judge the suspect differently according to the motive, but that it could not be measured as there was no increase of stress and shame in the first place. However, it is also possible that interviewers were not influenced by the motive of the suspects and did therefore not judge the suspects differently.

After conducting two logistic regressions, the level of shame and stress was found to not be predictive of the behavioural responses of respectively "Denial" and "Exploration". The behavioural response "Apologize" was not used once by the interviewers, indicating that they seemed to not be aware of their error making. Moreover, most participants made use of the code "Contradiction" as probably most of the participants still kept the information they received a few minutes earlier in their mind. As a result they often replied with "No, it is about a USB" after being confronted with the missing tablet as it seemed like they wanted to stick to the script given by the researchers. However, in this study, there was no other possibility than to trick the participants to make the error themselves. As the sample consisted of untrained people regarding interviews, they did not know how to properly conduct an investigative interview. Moreover, in order to control the same error over different conditions this experimental setup was used. Thus, it was not possible to manipulate the study in a way that ensured that they made the error themselves. With the current study design, the likelihood of making an error was very high, as it could be controlled by the researchers, which is the reason for implementing it that way, as the sample size was limited and it could not be afforded to exclude many of the participants when not making an error. For future research it might be interesting to observe error making in

general without instructions and see the responses of the error maker. However, when only observing errors, it is very likely that these errors will be different every time and the responses of participants will also differ which will make the interpretations harder.

Another point regarding the limitations of the study is concerning the coding of the behavioural responses of the participants in the factual error group. In the first coding sessions of the behaviour of the participants by the researchers it was not clear how each behaviour would be exactly coded. Even though the researchers identified the coding scheme beforehand and applied them to the setting, it was not entirely clear in what way the spoken words of the participants were coded. Even though the research team did discuss the codes beforehand, it was not properly reviewed so that it was not ensured that each researcher did code the behaviour in the same manner. Instead, as the definitions were not clear before the beginning of the coding, the research team had some disagreements after first comparing the results of their individual codings. Moreover, the initial idea was to include first as well as secondary responses which should be coded. However, as these were also not discussed in detail regarding what belongs to the first and what to the secondary response, there were a lot of different interpretations. As a result, the inter-rater reliability of the secondary responses was very low after the first comparison. Finally, in this study it was then decided that the secondary responses were excluded as the inter-rater reliability was low. For future research it is essential to discuss what the different codes mean in the study before actually implementing them.

Conclusion

This research aimed to see whether error making in an interviewer context has an impact on the interviewer who committed an error. The results of this study showed that there is no

increase of perceived stress as well as shame on interviewers who make a factual error and therefore, there is no effect. Moreover, the study did not show any effect of presumed motive. These findings suggest that it is not that important from the point of view of interviewers whether they make errors in investigative interviewers as this does not result in a higher level of stress and shame. This study filled in the knowledge gap of whether the same results obtained by Oostinga et al. (2020) could be obtained in a different context. However, the findings of this study should be viewed with caution as more research needs to be conducted in order to generalize the current findings. The mentioned limitations may open up the question whether the results of studies which included trained professionals, like Dutch police officers, can be replicated by lay people in the first place. The findings of the current study seem to suggest that the psychological effects of higher stress and shame will only be achieved in a law enforcement context carried out by trained personnel that is aware of the possible outcomes of errors in high risk scenarios. In order to better understand the findings of this study, future research could address whether it is wise and even possible to replicate studies which involve people with much more and different knowledge than that of a person without any training. Additionally, it could be worth setting up studies which research whether someone's interviewer experience or awareness of negative outcomes will affect their stress and shame levels after error making. Finally, it should be noted that it would be beneficial to carry out future studies which will replicate the current findings while overcoming the limitations in order to generalize or to disprove the findings of this study.

References

Buckley, O., Nurse, J. R., Legg, P. A., Goldsmith, M., & Creese, S. (2014, July). Reflecting on the ability of enterprise security policy to address accidental insider threat. In *2014 Workshop on Socio-Technical Aspects in Security and Trust* (pp. 8-15). IEEE.

Bynum IV, W. E., & Goodie, J. L. (2014). Shame, guilt, and the medical learner: ignored connections and why we should care. *Medical education*, *48*(11), 1045-1054.

Cavalera, C., Pepe, A., Zurloni, V., Diana, B., & Realdon, O. (2017). A short version of the State Shame and Guilt Scale (SSGS-8). *TPM–Testing, Psychometrics, Methodology in Applied Psychology*, *24*(1), 99-106.

Collins, K., & Carthy, N. (2019). No rapport, no comment: The relationship between rapport and communication during investigative interviews with suspects. *Journal of Investigative Psychology and Offender Profiling*, *16*(1), 18-31.

CPNI, CPNI Insider Data Collection Study. Report of Main Findings, pp. 1–15. Centre for the Protection of National Infrastructure, UK (2013)

Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analyses in moral judgment. *Cognition*, *108*(2), 353-380.

Decety, J., Michalska, K. J., & Kinzler, K. D. (2012). The contribution of emotion and cognition to moral sensitivity: a neurodevelopmental study. *Cerebral cortex*, *22*(1), 209-220.

Dimitrova, N. G., Van Dyck, C., Van Hooft, E. A., & Groenewegen, P. (2015). Don't fuss, focus: The mediating effect of on-task thoughts on the relationship between error approach instructions and task performance. *Applied Psychology, 64*(3), 599-624.

Elmrabit, N., Yang, S. H., & Yang, L. (2015, September). Insider threats in information security categories and approaches. In *2015 21st International Conference on Automation and Computing (ICAC)* (pp. 1-6). IEEE.

Glasser, J., & Lindauer, B. (2013, May). Bridging the gap: A pragmatic approach to generating insider threat data. In *2013 IEEE Security and Privacy Workshops* (pp. 98-104). IEEE.

Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.

Greitzer, F. L., Strozer, J., Cohen, S., Bergey, J., Cowley, J., Moore, A., & Mundie, D. (2014, January). Unintentional insider threat: contributing factors, observables, and mitigation strategies. In *2014 47th Hawaii International Conference on System Sciences* (pp. 2025-2034). IEEE.

Jorgenson, J. (1992). Communication, rapport, and the interview: A social perspective. *Communication Theory*, *2*(2), 148-156.

Landis, J., & Koch, G. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics, 33*(1), 159-174. doi:10.2307/2529310

Lynch, D. M. (2006). Securing Against Insider Attacks. *Inf. Secur. J. A Glob. Perspect.*, *15*(5), 39-47.

Malle, B. F., & Knobe, J. (1997). The folk concept of intentionality. *Journal of experimental social psychology*, *33*(2), 101-121.

Matthews, G., Campbell, S. E., Falconer, S., Joyner, L. A., Huggins, J., Gilliland, K., ... & Warm, J. S. (2002). Fundamental dimensions of subjective state in performance settings: Task engagement, distress, and worry. *Emotion*, *2*(4), 315.

Milne, B., & Powell, M. (2010). *Investigative interviewing* (pp. 208-214). Cambridge University Press.

Nurse, J. R., Buckley, O., Legg, P. A., Goldsmith, M., Creese, S., Wright, G. R., & Whitty, M. (2014, May). Understanding insider threat: A framework for characterising attacks. In *2014 IEEE Security and Privacy Workshops* (pp. 214-228). IEEE

Oostinga, M. S., Giebels, E., & Taylor, P. J. (2018). 'An error is feedback': the experience of communication error management in crisis negotiations. *Police Practice and Research*, *19*(1), 17-30.

Oostinga, M. S., Giebels, E., & Taylor, P. J. (2020). Communication Error Management in Law Enforcement Interactions: A Sender's Perspective. *Criminal justice and behavior*, *47*(1), 39-60.

Parkinson, M., & Byrne, R. M. (2018). Judgments of moral responsibility and wrongness for intentional and accidental harm and purity violations. *Quarterly Journal of Experimental Psychology*, *71*(3), 779-789.

Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annu. Rev. Psychol.*, *58*, 345-372.

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.

Appendices

Appendix A:

Imagine yourself in the following scenario, and try to act as realistically as possible.

You are a human resource professional for the company 'Volkswagen', for which you have been working for 10 years now. One of your tasks as a human resource manager is leading investigative interviews. As an investigative interviewer you already interviewed a lot of people in the company that were under suspicion of breaking the company's policy or engaged in malpractice.
Yesterday, one of the department managers called and told you that there was an incident in the design department. More specifically, two weeks ago, a USB stick with the designs for a new important project went missing. After this incident, a competing company publicly revealed their plans for the production of a new car with a similar look to the design saved on the lost USB. On the day the USB went missing the employee (Alex Baker) was the last one who signed up for using it. Therefore, you are asked to investigate the incident by interviewing Mr(s). Baker, a 30 year old product designer, about the possible crime.

To prepare for the investigative interview, you begin to collect information about Mr(s). Baker.

Evidence

- The employee has a good relationship with other colleagues who described them as a friendly and ambitious person that is good with everybody.
- Mr(s). Baker did not sign out for the used USB stick. This violates company policy, which states that all use of equipment should be registered.
- Mr(s). Baker had several discussions with the manager about being dissatisfied with their pay grade, however all requests for an increased pay were denied.
- You hear from a colleague that Alex Baker has considered quitting the job in the past, but has not yet done so.

Your conclusions
Based on this information you believe that Mr(s). Baker has accidentally misplaced or lost the USB stick, which could give someone else the chance to copy the design or take the stick with them. You base this idea on the evidence that the employee is said to be a very ambitious and involved worker. Further, despite the frequent requests for a higher salary they have not left the company. Also, the fact that Alex did not sign out for borrowing the equipment is unusual. During the interview, do not give all this information right away but try to ask directed questions to understand the suspects point of view. The goal of the interview, you are about to conduct, is to find out more about Mr(s). Baker and if they are involved in the leak of company information. During the interview you should treat Mr(s). Baker with respect and in a professional manner.

Interview guide:

- At the beginning of the interview, check the background information of the employee that was stated above (e.g. their name, age, job and tasks)
- What did the employee do on the day the USB stick went missing?
- Was there a change in their usual routine that day?
- How satisfied are they with their current job?

The duration of the interview will be about 5 minutes.

Appendix B:

Imagine yourself in the following scenario, and try to act as realistically as possible

You are a human resource professional for the company 'Volkswagen', for which you have been working for 10 years now. One of your tasks as a human resource manager is leading investigative interviews. As an investigative interviewer you already interviewed a lot of people in the company that were under suspicion of breaking the company's policy or engaged in malpractice.
Yesterday, one of the department managers called and told you that there was an incident in the design department. More specifically, two weeks ago, a USB stick with the designs for a new important project went missing. After this incident, a competing company publicly revealed their plans for the production of a new car with a similar look to the design saved on the lost USB. On the day the USB went missing the employee (Alex Baker) was the last one who signed up for using it. Therefore, you are asked to investigate the incident by interviewing Mr(s). Baker, a 30 year old product designer, about the possible crime.

To prepare for the investigative interview, you begin to collect information about Mr(s). Baker.

Evidence

- The employee has a good relationship with other colleagues who described them as a friendly and ambitious person that is good with everybody.
- Mr(s). Baker did not sign out for the used USB stick. This violates company policy, which states that all use of equipment should be registered.
- Mr(s). Baker had several discussions with the manager about being dissatisfied with their pay grade, however all requests for an increased pay were denied.
- You hear from a colleague that Alex Baker has considered quitting the job in the past, but has not yet done so.

Your conclusions

Based on this information you believe that Mr(s). Baker has given the USB-stick to a rival company. You base this idea on the evidence that although the employee appears to be a very ambitious and involved worker, they have also frequently requested a higher salary and thought about leaving the company. Further, the fact that Alex did not sign out for borrowing the equipment is unusual. During the interview, do not give all this information right away but try to ask directed questions to understand the suspects point of view. The goal of the interview, you are about to conduct, is to find out more about Mr(s). Baker and if they are involved in the leak of company information. During the interview you should treat Mr(s). Baker with respect and in a professional manner.

Interview guide:

- At the beginning of the interview, check the background information of the employee that was stated above (e.g. their name, age job and tasks)
- What did the employee do on the day the USB stick went missing?
- Was there a change in their usual routine that day?
- How satisfied are they with their current job?

The duration of the interview will be about 5 minutes.

Appendix C:

The Effects of Presumed Motive and Error Making in an Organisational Interview Context

Thank you for participation in this interview study! As you were aware this study focuses on the communication process within interview settings. The goal of this research is to research how communication errors (saying the wrong missing object) by interviewers affect the way they feel, think and behave. Further, it was researched whether an interviewer's perception of the suspect's motive, and the way interviewers are inclined to give meaning to their mistakes may influence the aforementioned relationship. In this research we wanted to minimize the probability of demand characteristics, in other words, that you would (unconsciously) react in ways you think favorableable for the research. But, which are not your intuitive reactions. Therefore, the interview was manipulated in two ways without informing you.

Firstly, in advance we have provided you with information on the lost object that may have caused the leak. Before the interview we have instructed the suspect, who was part of the research team, to respond to hearing you bring up that object differently depending on the participant group you were assigned to. Either the suspect was supposed to act as if the USB stick was indeed he or she had lost. If that were the case the suspect should have just continued the conversation, in this case you will not have noticed anything. If you were in the incorrect object participant group, then the suspect was instructed to respond somewhat offended and

surprised whilst commenting that they had not lost their USB stick. This allowed us to observe how you did (or did not) react to making a communication error.
Secondly, we have manipulated your presumed motives (what you considered the suspect's motive for his or her deeds) by providing you with one of two possible texts. Either you were informed that the suspect was guilty to the offence of leaking company information and did so purposefully. Or you were also informed that the suspect was indeed guilty, but that he or she had accidentally leaked the company information. We wanted to find out whether manipulating someone's presumed motives would affect the way they reacted to making communicational errors.
As you were not informed about these manipulations beforehand you have not been able to give a full consent to participate in this research, we hope this information has provided you with a clear view of our study. If you have any questions left about your participation, feel free to ask them now in the Teams call or to reach out to us at a later moment. We find it important that you can make a full informed decision on your participation, this means you are also still free to revoke the use of your data within one week after participation. If you wish to do so feel free to let us know. Otherwise, all of us thank you for your participation and wish you a wonderful day!

Thank you for your participation in this study!