Crisis Negotiation Training: Does Integrating Examples Enhance the Effectiveness of the Teaching Process?

Seray Diken (s2139634)

Faculty of Behavioural Management and Social Sciences, Department of Technology, Human and Institutional Behaviour, Psychology of Conflict, Risk and Safety section, University of Twente

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1st Supervisor: Dr Miriam S. D. Oostinga

2nd Supervisor: Dr Steven J. Watson

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Abstract

The aim of the study was to determine if examples are a helpful aid for teaching crisis negotiators to deal with persons in crisis (PiC) who exhibit concerning behaviour traits. Providing examples based on realistic situations helps to connect the acquired knowledge with crisis negotiations, and thus increases the likelihood of successful implementation (Rawson et al., 2015). Thereby, the main focus was on examining if examples decreased the perceived stress, distraction, the perception of danger of a PiC and increased the performance and preparedness of novice crisis negotiators during a virtual crisis negotiation. To achieve this, 44 participants took first part in a theoretical training which either included examples or did not include examples and then applied their acquired knowledge in a virtual crisis negotiation where they had to convince a PiC with suicidal ideations to step down from the edge of a rooftop. The findings revealed that incorporating examples in theoretical training enhances preparedness, reduces the perceived danger of a PiC, and surprisingly heightens the perceived stress of novice negotiators. Also, examples increase the preparedness of novice negotiators which increases their perception of danger regarding a PiC or crisis situation. These findings are helpful in developing training for crisis negotiators as it gives a first indication that examples may improve the theoretical part of a crisis negotiation training.

Keywords: example-based learning**,** crisis negotiation training, concerning behaviour

Introduction

Crisis negotiators are confronted with the challenge of providing immediate, safe and effective responses during crisis negotiations, as crisis situations are high risk and a significant proportion of people in crisis (PiC) display concerning behaviour patterns (de Vries et al., 2016; Grubb et al., 2021). The PiCs perception that their capacity to cope with a significant event, such as a loss, has been exceeded can lead to the belief that resolving the experienced crisis requires taking extreme measures (Johnson et al., 2018). Thus, the PiC exhibits "concerning behaviour" patterns that endanger the PiC and the people in its vicinity (Abraham & Nauta, 2014; Bulsink & Potgieter, 2018). Concerning behaviour can be expressed as suicide attempts, disorientation, paranoid or delusional episodes, hallucinations, memory loss, or aggressive behaviour such as threats or physical violence. Often PiCs are also under the influence of stimulants such as drugs, which can alter their behaviour or increase the prevalence of mental illnesses such as delusions, impairing their judgement and making their actions unpredictable (Bulsink & Potgieter, 2018; Koekkoek, 2019). In Europe and Asia, pursuing suicidal intentions is a prevalent concerning behaviour that negotiators are often confronted with, reinforced by the Covid-19 pandemic and the use of social media (Sher, 2020; Twenge, 2020; Vecchi et al., 2019; World Health Organization, 2023). Crisis negotiators are called in to intervene when a PiC shows suicidal intentions by helping the PiC to cope with the situation, reduce the heightened emotionality, and increase rationality. However, the PiC's unpredictability makes it difficult for the crisis negotiator to assess and understand the PiC's true intentions and behaviour (Hatcher et al., 1998; Koekkoek, 2019; Rogan, 1997; Van Hasselt et al., 2008). The unpredictability of concerning behaviours and the fact that they are a recent development that is under-researched makes it difficult to develop effective training programs (de Vries et al., 2016; Grubb et al., 2021).

The development of effective training methods for crisis negotiators is crucial considering the increased incidence of concerning behaviour and the growing suicide rate to which crisis negotiators are consulted. Thus, providing extensive and continuous practical training is of high priority to ensure that crisis negotiators feel prepared (Grubb et al., 2021). While crisis negotiators benefit from practical training in realistic scenarios, it is equally essential that they also acquire a strong theoretical foundation (Castro, 2019). It is important to ensure that crisis negotiators understand the connection between the learned theoretical knowledge and the application of the knowledge during a crisis negotiation. Potential ambiguity caused by abstract concepts and definitions can lead crisis negotiators to be uncertain about the practical application of acquired knowledge in real crisis situations, leading to failure in implementation (Foshay, 2010; Grubb et al., 2021). Examples, included in theoretical training, that directly apply a concept to crisis situations by reflecting real scenarios may serve to bridge the gap between theory and practice (Foshay, 2010; Rawson et al., 2015). It is thereby important to consider that the application and use of examples can have an impact on its effectiveness, because oversimplifying a complicated concept or relying on a specific example without thinking critically can lead to difficulties in practical application (Rawson et al., 2015). The aim of this study is therefore to determine whether theoretical training with examples is more effective than theoretical training without examples regarding knowledge acquisition and its application within a practical virtual crisis negotiation training. The focus will be on students acting as novice negotiators due to the study scope and author's resources.

To the authors' knowledge, there is currently no other study that examines the effectiveness of examples within the theoretical part of crisis negotiation training using a virtual crisis negotiation. Thus, this study can contribute to developing an efficient and

easy-to-implement learning method to teach theoretical knowledge in the field of crisis negotiation. Also, it provides information about learning behaviour and the best way to assimilate knowledge and apply it in practice.

The next section explains a possible training method for crisis negotiators and how the training might prepare negotiators better for crisis situations. After that, the methodology, results and a discussion, including limitations and future directions of the study are described.

Crisis Negotiation Training

To ensure that crisis negotiators are optimally trained and prepared for a crisis negotiation with a person who exhibits the concerning behaviour of suicidal tendencies, they must receive effective crisis negotiation training beforehand. Thereby, the training should consist of two components, a theoretical in which knowledge about crisis negotiations is acquired and a practical in which the knowledge is applied directly (Foshay, 2010; Oliveri et al., 2017).

Theoretical Component

To acquire or teach a theoretical basis, it is important to determine in advance how knowledge can be best gained with minimal effort and accessibility for a broad audience. The acquisition of knowledge depends on various factors such as previous knowledge, learning type and many other factors (Brod, 2021; Haleem et al., 2022). Since not all factors can be examined in this thesis, the focus is on example-based learning as it is simple to implement in any teaching process (Rawson et al., 2015).

An effective strategy for teaching is to include examples explaining the topic and relating it to a real-life situation in which learners will need to apply the gained knowledge (Cho & Lee, 2013; Foshay, 2010). Providing examples that relate to real-life situations encourages learners to connect the learned knowledge to these situations, which increases the likelihood that learners

will be able to successfully implement the learned concepts within a real-life context (Rawson et al., 2015). Also, relevant examples help learners to better understand the topic they are learning as it helps to make abstract concepts more concrete and enhances comprehension fostering initial cognitive skill acquisition (Foshay, 2010; Renkl, 2013). Especially, novice learners benefit from examples as it gives them direct access to new information without requiring self-explanation (Sweller et al. 2007). Thereby, the probability of misunderstanding new topics due to misinterpretation of the learned content or real-life applicability can be reduced (Renkl et al., 2009). Self-explanation, an automatic process when no examples are given, during the initial phases of acquiring new skills or knowledge can be slow, error-prone, and driven by superficial problem-solving strategies, hindering skill acquisition and the deepening of understanding (Renkl, 2013). Conversely, a learner with prior experience and knowledge requires less detailed examples for concept comprehension. For such learners, engaging in problem-solving activities is more effective, facilitating a deeper understanding of the topic (Kalyuga, 2005).

The effectiveness of examples in enhancing learning, however, depends on the combination of examples and the previously given definition of the specific concept to be learned (Foshay, 2010; Rawson et al., 2015). By giving a clear definition and suitable examples the learning efficiency of concepts and principles can be significantly increased (Foshay, 2010). In addition, the application of example-based learning should be adapted to the learner's prior knowledge to ensure successful learning, as novice learners require additional support compared to learners with prior knowledge (Renkl, 2013). Given the study's emphasis is on novice negotiators, example-based learning encompasses clear definitions and examples of crisis negotiation concepts that are directly applied to a crisis situation (Cho & Lee, 2013; Foshay, 2010).

Practical Component

The practical part of crisis negotiation training enables crisis negotiators to apply acquired theoretical knowledge, practise their skills, and become familiar with their application during crisis negotiation scenarios (Grubb et al., 2021). Simulating a crisis negotiation by role-playing is the most widely used method for this, however, the effectiveness depends on participant skills, instructor qualifications, and rapport, resulting in varying learning effectiveness within different groups (Schinko & Bednar-Friedl, 2022; Van Hasselt et al., 2008). Reflecting the diverse behaviours and perspectives of people with concerning behaviours is crucial for conveying the seriousness of real-life encounters, but role-playing's limitation lies in its inability to entirely replicate the urgency of real-life scenarios due to their typically controlled safe settings (Movius, 2008; O'Sullivan, 2011; Van Hasselt et al., 2008). Alexander and LeBaron (2009) and Grubb et al. (2021) highlight that participants in negotiation training benefit from realistic contexts that evoke genuine responses and thus facilitate a smoother transition from learning to real-life applications. Nonetheless, they also emphasise the irreplaceable value of "learning by doing" during "the real thing" or "live scenarios", which is not given by role-playing.

To compensate for these limitations and prepare crisis negotiators, adding a virtual reality crisis negotiation environment next to the role-playing practices is a viable option. Virtual crisis negotiation allows to create realistic scenarios and to recreate different authentic environments, conditions, people and emotions, thus, enabling users to re-enact different interactions and to observe and reflect on their behaviour (Pan & Hamilton, 2018; Philippe et al., 2020). Also, the most recent learning developments indicate that "blended learning", a combination of traditional

face-to-face learning, like role playing, with the integration of technical devices like PowerPoint Presentations and VR, is a very effective learning approach (Castro, 2019; Nayar & Koul, 2020).

Preparing a Crisis Negotiator for Crisis Negotiations

The primary training objectives aim to equip crisis negotiators for authentic crisis negotiations. However, to achieve this effectively, several critical considerations must be taken into account. While the integration of theoretical knowledge and practical skills is essential for crisis negotiators' readiness in real crisis situations, it is also important to be aware of the emotional state of the crisis negotiator and how they cope before and during the crisis negotiation (Grubb et al., 2021). Crisis situations are unpredictable and the stakes are high which can lead the crisis negotiator to experience a heightened stress level, feel not enough prepared, be distracted by the surroundings, or perceive a PiC as potentially dangerous due to exhibited concerning behaviour patterns (Lim et al., 2023). These factors can influence the behaviour of a crisis negotiator during a crisis negotiation. Hence, it is important to assess whether a good training program not only enhances theoretical and practical competence but also mitigates stress, minimises distractions, alters the perception of PiCs as threats, increases preparedness, and improves performance during actual crisis negotiations. Thereby, emphasis is placed on whether examples within the theoretical training effect the aforementioned factors.

Effects of Training on Stress and Distraction

Crisis negotiations are inherently uncertain and high-stress situations involving the lives and well-being of individuals and the continuous availability of crisis negotiators (Grubb et al., 2021). The high stakes and unpredictability, as well as the feeling of not having control over the crisis situation, trigger a stress response in the crisis negotiator (Lim et al., 2023). How the crisis negotiator expresses this stress response depends on the intensity of the feeling of stress.

Extremely high-stress levels can lead to the crisis negotiator reacting impulsively, being overwhelmed, struggling to make decisions and can lead to a disruption of attention (Cooper, 2007). A disruption and shifting of attention and not being able to focus on the PiC during the crisis negotiation is referred to as distraction within the context of the study and can be caused through stress, media or crowds or thoughts that are not related to the PiC (Brown et al., 2019; Lavie, 2010; Logan, 2001). An elevated perception of stress can manifest in physiological and psychological impairments as well as diminish negotiators' attention thus error-prone behaviour is more likely to occur and the ability to listen carefully and pay attention to behavioural cues is restricted (Greenstone, 2008; Lavie, 2010; Norton & Petz, 2012). Whereas feeling slightly acute stress can have positive effects like increased general alertness, attentiveness and enhanced mental and physical performance, which can have a positive impact on crisis negotiation (Dhabar, 2018; Qi & Gao, 2020). Managing these stressors and training attentiveness, both during and after crisis negotiations, holds critical implications for the short-term resolution success of the crisis situation and the long-term well-being of negotiators (Norton & Petz, 2012). Therefore, enhancing attentiveness and managing the level of stress experienced by the crisis negotiator is a priority to ensure that the stress level is within a healthy range so that it is helpful rather than disrupting focus (Cooper, 2007; Lim et al., 2023).

Preparatory training conducted in advance of crisis negotiations can serve as an effective mechanism for stress and distraction management. Training allows negotiators to prepare for a diverse array of unexpected situations and acquaints them with procedural intricacies, which collectively contribute to enhanced stress management and feeling able to be in control during crisis negotiations, facilitating attentiveness and decreasing distraction (Caroll et al., 2020; Strentz, 2006). Real-life examples help to illustrate different crisis situations, which contributes

to reducing uncertainty and also helps in connecting acquired knowledge to real-life situations

increasing the likelihood that learned concepts can be successfully applied during crisis

negotiation (Rawson et al., 2015). Therefore, the perception of the crisis negotiator that he has

gained a good skill set for managing a crisis situation is enhanced which can mitigate the

experienced stress to an optimal level and thus ensure attentiveness, leading to the following

hypotheses:

Hypothesis 1 (H1): "The training condition with examples will cause the novice

negotiator to experience less stress during the Virtual Reality Negotiations compared to the

training condition without examples.".

Hypothesis 2 (H2): The novice negotiators who take part in the training condition with

examples are less distracted during the Virtual Reality Negotiation compared to the novice

negotiators who participated in the training condition without examples.

Effects of Training on the Perception of Danger

In crisis situations, the stakes are high, therefore the crisis negotiator relies on prior

beliefs, attitudes and knowledge regarding the PiC (Watson & Angell, 2007). Thus, the crisis

negotiator could act avoidant or be hesitant to offer help when the PiC is labelled as dangerous

and unpredictable (Watson et al., 2002). Whereas, when the crisis negotiator received accurate

information about the mental state, and risk factors of the PiC prior to the negotiation and had

been educated beforehand about concerning behaviour patterns and the relative risk a PiC can

pose the PiC is perceived as less dangerous (Penn et al., 1999; Ritter et al., 2010). Nevertheless,

it is essential to acknowledge to crisis negotiators that they cannot be prepared for every crisis

situation or encounter with a PiC. Therefore, emphasising to crisis negotiators that the training

and information provided apply to a broad spectrum of situations is crucial. This reassurance

aims to mitigate the perception of crisis situations as overly uncertain and the PiC as inherently dangerous, fostering negotiators' confidence in their ability to negotiate, ultimately contributing to a more effective resolution of the crisis situation (Morabito, 2007; Watson et al., 2008; Lamb et al., 2002). Examples can give a basic understanding of the types of PiCs that can be encountered, symptoms related to concerning behaviour and the relative risk of violence, while equipping with de-escalation techniques that can be applied in a variety of situations as examples can illustrate different crisis situations and behaviour patterns of PiCs (Ritter et al., 2010; Watson et al., 2008). Leading to the following hypothesis:

Hypothesis 3 (H3): "The novice negotiators that take part in the training condition with examples experience less feelings of danger during the Virtual Reality Negotiation compared to the novice negotiators who participated in the training condition without examples.".

Effects of Training on Performance

Performance refers in the context of the study to the ability of a crisis negotiator to resolve a crisis situation without the PiC getting hurt or refusing to talk to the crisis negotiator. To effectively resolve a crisis negotiation, the crisis negotiator needs fundamental knowledge about the triggers of a crisis situation, which individuals can be encountered, and crisis negotiation strategies. In addition, the crisis negotiator needs various skills, such as the ability to listen actively and to respond to the feelings of PiC (Vecchi, 2019). These are all skills that a crisis negotiator must acquire in advance of the crisis negotiation.

Examples that refer to real-life situations can help to connect learned knowledge to crisis situations and explain how to apply the learned skills (Foshay, 2010). Thereby, the successful implementation of the skills during a crisis situation and the performance of the crisis negotiator enhances (Rawson et al., 2015), leading to the following hypothesis:

Hypothesis 4 (H4): The training condition with clear examples leads to an overall better performance of the novice negotiators during the Virtual Reality Negotiation compared to the training condition without examples.

Effects of Training on the Feeling of Preparedness

Preparedness in the context of crisis negotiations involves the crisis negotiator acquiring knowledge and practical experience about crisis negotiations to achieve a readiness to respond and negotiate at any given time (Caroll et al., 2020). Preparing for different crisis situations in advance allows the crisis negotiator to practise different strategies and figure out what works effectively which helps to be more certain about one's competencies (Caroll et al., 2020). Thereby, the more time and effort is invested in being prepared for different crisis situations the likelihood of faster responses increases and the making of errors decreases during a crisis negotiation (Altmann, 2004).

An essential part of preparedness is theoretical training which provides knowledge about the different crisis situations, the people involved, effective response strategies and coping strategies. Incorporating examples into theoretical training can help in illustrating diverse crisis situations, behavioural patterns of PiCs, and the corresponding negotiation techniques and responses for a crisis negotiator (Rawson et al., 2015). These crisis negotiation-related examples enhance the negotiator's comprehension of a broad range of situations and techniques, thereby reducing uncertainty and fostering a heightened sense of competence in responding to scenarios akin to those demonstrated, leading to the formulation of the following hypothesis:

Hypothesis 5 (H5): "The training condition with examples prepares the novice negotiators better for the Virtual Reality Negotiation than the training condition without examples.".

The feeling of preparedness results from good training in advance. Training allows negotiators to prepare for a diverse array of unexpected situations, behaviour patterns and the relative risk a PiC can pose, and acquaint them with procedural intricacies, which collectively contribute to feeling able to be in control during crisis negotiations (Penn et al., 1999; Ritter et al., 2010; Strentz, 2006). Additionally, being prepared through the acquisition of knowledge and coping strategies like stress management provides confidence and a sense of control helping the negotiator to manage stress and emphasises the importance of being attentive which decreases distraction (Caroll et al., 2020). Furthermore, the perceived dangerousness of the PiC and experienced stress decreases when prior preparation includes acquiring accurate information about the PiC and an understanding of associated risk factors (Penn et al., 1999; Ritter et al., 2010). Preparedness helps crisis negotiators to respond to crisis situations more confidently and efficiently than when being unprepared thereby increasing performance (Caroll et al., 2020). Thus, feeling confident in implementing crisis negotiation strategies, like active listening, and being able to successfully negotiate during crisis situations can mitigate the experienced stress, distraction, and dangerousness of the PiC and enhance the performance of crisis negotiators (Caroll et al., 2020). Therefore, the following hypotheses was proposed:

Hypothesis 5 (H5a): "The preparedness level of novice negotiators mediates the effect of training on the feeling of stress, distraction, perceived danger, and performance within the VR crisis negotiation. "

Method

Design

Participants were asked to participate in a theoretical crisis negotiation training and a practical virtual reality crisis negotiation, learning negotiation strategies and adopting the role of a crisis negotiator by convincing a PiC to step down from a rooftop. Participants were assigned

randomly to either a control or experimental group, the first participant was in the experimental

group and the second in the control group, and the subsequent participants followed this

allocation pattern. In the control group, participants received theoretical training on basic

negotiation concepts without examples, while the experimental group received the same

theoretical training along with examples defining these concepts. The independent variable was

both theoretical training conditions. The dependent variables were stress, distraction, perception

of danger, objective performance, and preparedness. The study was part of a bigger project

including one other student, who focused on the virtual reality crisis negotiation environment.

Participants

Prior to the study, four participants took part in a pilot test in which the experiment

procedure and the products developed were tested. After the pilot testing, key theoretical

concepts in the PowerPoint slides were highlighted by making them bold to ensure that

participants understood the main characteristics of the theories. Additionally, the negotiator's

responses in the VR negotiation were shortened and partially adapted, as they were too long to

display entirely in the VR text field without participants needing to scroll down using the

controller.

In the experiment participants were asked to participate through the University of

Twente's credit system (SONA) and personally by the researchers. Initially, 47 participants took

part in the experiment, however, three participants had to be excluded from the data set, as the

performance within the VR environment was not recorded from two participants and one

participant did not answer the questions of the stress and distraction scale within the

questionnaire. Out of the 44 participants, 22 underwent the training without examples (50 %) and

22 completed the training with examples (50 %). The gender was equally distributed with 22

female participants (50 %), and 22 male participants (50 %). The participants' ages ranged from 18 to 31 (M_{age}= 23.12, SD_{age}= 2.8). The majority of participants were German (77.3 %), 3 participants were Dutch (6.8 %), and 7 participants were of other nationalities (15.9 %). The educational background of the participants was that 29 participants were pursuing their Bachelor's (66 %), 11 participants were Bachelor graduates (25.1 %), and 3 participants completed career training (6.9 %). The inclusion criteria to participate in the study were: (1) being above the age of 18 years old, (2) being proficient in English, and (3) feeling comfortable and having no problems/ or being triggered by the topic of suicide.

Procedure

For the crisis negotiation training, the software Microsoft PowerPoint and the VR Meta Oculus Quest 2 set (Meta, 2023) were used. To teach the theoretical part of how to act and interact during crisis negotiation two PowerPoint Presentations, one without examples (see Appendix A), and one with examples (see Appendix B), were developed. The VR-Headset was used for the practical part of the training where the participants had to apply their gained knowledge in an immersive Virtual Reality crisis negotiation.

The VR Meta Oculus Quest 2 set consists of a VR Headset, two Touch Controllers and a Glasses Spacer. The VR-Headset enables an immersive Virtual Reality crisis negotiation experience through 360° view, 3D positional audio, hand tracking and haptic feedback (Meta, 2023). The Glasses Spacer ensured that glasses wearers were able to keep their glasses on which ensured that within the VR environment, everything was recognised and no manipulations were triggered by impaired vision.

Figure 1

Meta Oculus Quest 2 Set

The study received ethical approval from the ethical committee of the Behavioural, Management and Social Sciences (BMS) faculty at the University of Twente with request number 230825 prior to data collection. The entire study was conducted in English to promote inclusivity. The data collection occurred in a room of the social science innovation lab (BMS Lab) of the University of Twente over ten weeks. Participants were briefed about the experiment's objective which involved confronting a person exhibiting suicidal behaviour in a Virtual Reality environment, and assured that they could withdraw at any time without explanation. Data confidentiality and anonymity were ensured, and participants provided active consent (see Appendix C).

First, the participants took part in a theoretical crisis negotiation training via PowerPoint presentations. Participants were randomly assigned to one of two groups: a control group with no examples (see Figure 2) and an experimental group with examples to explain the theories (see Figure 3). The concepts covered included the Revised Behavioural Influence Stairway Model (Vecchi, 2019), the categorization of people displaying concerning behaviour by Strentz (2013), and communication errors and response strategies (Oostinga et al., 2017). In both conditions, participants navigated through the presentations independently, taking as much time as needed for each theory (Mayer, 2009). Participants had the opportunity to review the concepts they wanted to revisit. The researcher was present to address any questions during the learning phase.

Figure 2

Control Group with No Examples

Figure 3

Experimental Group with Examples
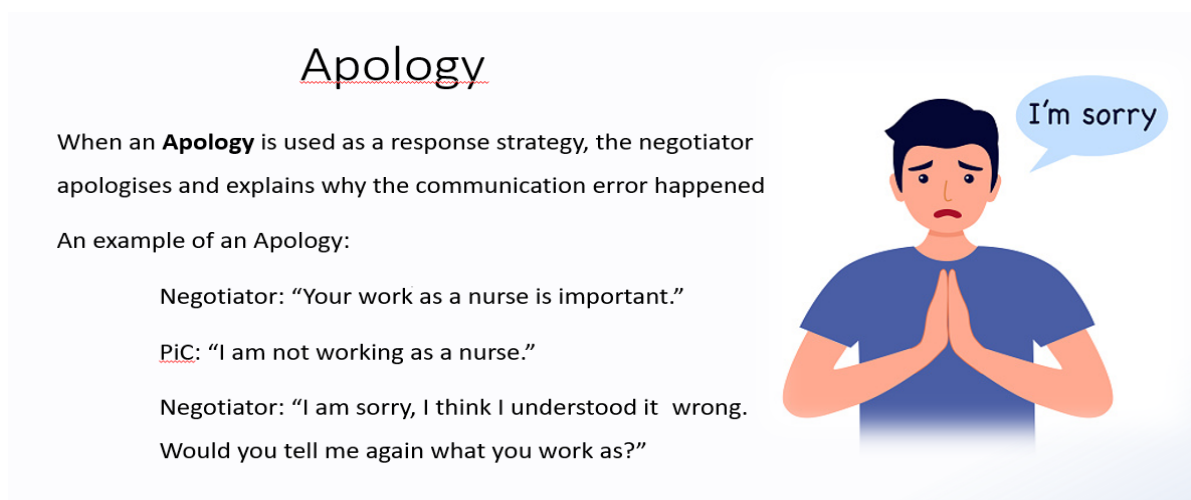
   After they participated in the control or experimental group, participants applied their

acquired knowledge in the VR crisis negotiation using the Oculus Quest 2 VR headset (Meta,

2023). They were provided with two touch controllers for navigation within the VR

environment. Instructions on using the touch controllers were given before entering the virtual

reality. Participants were informed that they would initially start on a main street surrounded by

skyscrapers within the VR environment to become familiar with the controls. Additionally, participants were informed that during interactions with the PiC, they would see text boxes with two choice options, which they could select one using their touch controllers.

At the starting point, participants had 45 seconds to become familiar with the surroundings, navigation and the feeling of being within a VR environment. After 45 seconds of being inside the starting point, participants heard an emergency call through the 3D positional audio, which is an integrated loudspeaker in the headset. The emergency call was: "We have an emergency. There is a man who is apparently drunk and suicidal. He wants to jump from a building close to you. Please go there quickly". When participants felt ready, they were given the option of being teleported to the top of the skyscraper by walking to a stop sign at the end of the street.

Once on the rooftop of the building, the participants were able to see the person in crisis at the edge and walk towards him. Before the participant could approach the person, the first two options were triggered and displayed (see Figure 4 for an example of how the answer options were displayed). After the participant selected an option, the participant's response text was displayed in a dialogue box for the participant to read independently. Once the participant has read the response text, they press a button on the touch controller, which displays the PiC's response and reaction. The participant was able to hear the PiC's response through the headset, as it was spoken beforehand, and read it in a dialogue box. The interaction consisted of six response options of the participant and the respective response of the PiC. The participant had to choose from two response options, which were either right or wrong based on the previous training (see Appendix D). For instance, the PiC tells the crisis negotiator that he has debts and cannot solve them. The crisis negotiator then has two options to react: either he shows empathy for the PiC's

situation according to the Behavioural Influence Stairway Model (Vecchi et al., 2019) or the

crisis negotiator ignores the theoretical training and tries to get the PiC down from the roof

although the PiC had previously said that he would not come down (for more details see

Appendix D).

Figure 4

Display of Answer Options

After the participants completed the practical training within the VR, participants were

asked to fill out a questionnaire. The questionnaire includes the sociodemographic variables

(gender, age, nationality, educational level), and the dependent variables (perception of danger,

preparedness, stress, distraction). To display and measure the questionnaire the platform

Qualtrics XM was used (Qualtrics LLC, 2005). After finishing the questionnaire, participants

were debriefed and had the opportunity to ask questions about the content of the study. Also,

participants were given a contact address if they wanted to gain more information about the

content and findings of the experiment. All procedures were in accordance with the General Data

Protection (GDPR) rules.

Finally, participants that enrolled through the University of Twente credit system (SONA)

received their earned credits after they completed the experiment. To ensure that the collected

data of the experiment was stored safely a cloud server of the University of Twente was used.

The stored data was used for further analysis.

Measures

All questions used for the study are presented in Appendix E. The measures in the

following section are ordered differently to how they were asked in the study. Since the measures

do not build on each other, the order in which they are asked has no influence on the result.

Stress

To measure stress the Perceived Stress Scale 4 (PSS-4) was used (Cohen et al., 1983).

The items of the measure were adapted to suit the crisis negotiation setting. Besides, all items

were changed from past tense to present tense to measure the stress levels perceived during the

crisis negotiation. For example: "In the last month, how often have you been upset because of

something that happened unexpectedly?" was converted to "To what extent did you feel upset

during, or directly after the negotiation?". A 5-point Likert scale was used to measure the items

ranging from 1= None, 5 = Strongly. To create a scale, the items were averaged and higher scores

meant higher perceived stress levels during the VR crisis negotiation.

Distraction

To measure distraction the On-task thoughts items (Kanfer & Ackerman, 1989; Keith &

Frese, 2005) and the Off-task thoughts items (Kanfer & Ackerman, 1989) were combined. The

items of the distraction measure were adapted to fit the crisis negotiation context. For example:

"I found it easy to keep thinking about what I was supposed to do." was converted to " I found it easy to keep thinking about resolving the crisis situation.". The combined questionnaires were measured on a 5-point Likert scale (1= strongly disagree, 5= strongly agree). To create a scale, the items two to four were reversed, as these items originally measure the ability to focus during the crisis negotiation and higher scores would mean less experienced distraction. Then the mean of all items were determined. A higher score on this scale means that the negotiator experienced higher levels of distraction during the VR crisis negotiation.

Perception of Danger

To measure the perception of danger regarding the PiC and the crisis situation the dangerousness scale was used (Penn et al., 1999). The original questionnaire was adapted to better fit the context of a crisis negotiation with a person in crisis. For example: "The person is unpredictable" was converted to "To what extent do you think the person in crisis is unpredictable?". Responses were coded on a 7-point Likert scale ranging from "strongly disagree," "somewhat disagree," "slightly disagree," "no opinion," "slightly agree," "somewhat agree," and "strongly agree". To create a scale, the items were averaged and higher scores indicate a higher perception of danger regarding the PiC and the crisis situation during the VR crisis negotiation.

Objective Performance

The objective performance was determined based on the response options selected by the participants in the VR crisis negotiation environment. In the VR environment, participants had to choose six times between two response options, one of which was correct and one incorrect. Each correct answer scored one point, which meant that participants who got everything right

could score a maximum of six points. The correct responses were summed to obtain a performance score.

Preparedness

The preparedness scale was based on the section training and deployment preparation from the deployment risk and resilience inventory-2 (DRRI-2) (Vogt et al., 2012). The questionnaire was developed to assess experiences before, during and after military deployment and to fit the context of crisis negotiations the questionnaire was revised accordingly. For example: "The training I received made me feel confident in my ability to perform tasks assigned to me during deployment." was converted to "I gained the confidence to negotiate during crisis situations after the whole training.". Three items were removed from the original list of items, namely: "The training I received prepared me to deal with the region's climate", "I had enough gear to protect myself in case of an attack.", "my unit was well-prepared to operate as a team during deployment". These items were removed as they were not crucial and applicable within the study as the climate was consistent, the participant participated alone and needed no gear. Responses to the now 7-item scale were measured on a 5-point Likert scale (1= strongly disagree, 5 = strongly agree). To create a scale, the items were averaged, and a higher score on these scales means that the negotiator felt more prepared for the VR crisis negotiation.

Results

Preliminary Analyses

Reliability Scale and Correlations

Before testing the hypotheses, the means, standard deviations, internal consistency, and the correlations of the study variables preparedness, stress, distraction, perception of danger, and objective performance were examined (see Table 1).

The distraction scale showed good internal consistency, the preparedness and stress scales acceptable internal consistency, and the perception of danger scale questionable internal consistency (Pallant, 2016). Additionally, a moderate positive correlation between distraction and stress indicates that a participant with higher stress scores is also likely to have higher distraction scores.

Table 1

Descriptive Statistics, Cronbach's Alpha, and Pearson's Correlations Between Variables (N= 44)

Variables	*M*	*SD*	*α*	1	2	3	4
1. Stress*	2.31	0.78	.74				
2. Distraction*	2.38	0.62	.80	**.33**			
3. Perception of Danger**	2.28	0.48	.62	.24	.06		
4. Objective Performance***	5.43	0.82		-.07	-.14	-.1	
5. Preparedness*	3.61	0.47	.71	.17	.14	.21	.05

Note. **Bold** = *p* < .05 (2-tailed)

* The scales preparedness, stress and distraction were measured on a 5-point Likert scale (1= strongly disagree, 5= strongly agree)

** Perception of danger was measured on a 7-point Likert scale (1= strongly disagree, 7= strongly agree)

*** Objective performance is the performance within the VR based on the chosen right and wrong   choices (Right Choice= 1, Wrong Choice = 0)

Hypothesis Testing

The Effects of Examples in Theoretical Training

To determine whether novice negotiators who participated in the theoretical training condition with examples experienced less stress (Hypothesis 1), distraction (Hypothesis 2), perceived risk of a PiC (Hypothesis 3), and showed improved performance (Hypothesis 4) and preparation levels (Hypothesis 5) during a crisis negotiation in virtual reality compared to novice

negotiators who participated in the theoretical training condition without examples, independent samples t-tests were conducted. However, to test Hypothesis 4, a Mann-Whitney U test was conducted as the outcomes of the Shapiro-Wilk Test and Kolmogorov-Smirnov Test were below the threshold of $p < .05$, indicating that the performance scale was not normally distributed. The results of the independent samples t-test are shown in Table 2a and the Whitney-Mann test are presented in Table 2b.

In the theoretical training condition with examples, novice negotiators experienced slightly higher stress, felt slightly more prepared for the virtual crisis negotiation and perceived the PiC as less dangerous compared to the training condition without examples. The novice negotiators were less distracted and performed better during the virtual crisis negotiation in the training condition with examples, but these differences were not significant.

Table 2a

Group Statistics and Independent Samples T-Test regarding 'Stress', 'Distraction', 'Perception of Danger', 'Preparedness' on 'Both Training Conditions' (N= 44)

	Training with Examples		Training without Examples		T-test for Equality of Means			
	M	SD	M	SD	t	df	Sig. (2-tailed)	d
Stress*	2.55	0.77	2.08	0.75	2.04	42	**.04**	0.76
Distraction*	2.32	0.71	2.44	0.54	.63	42	.48	0.63
Perception of Danger**	2.08	0.58	2.48	0.65	-2.14	42	**.04**	0.61
Preparedness*	3.76	0.43	3.45	0.48	2.23	42	**.03**	0.45

Note. **Bold** = $p < 0.05$ (2-tailed)

* The scales preparedness, stress and distraction were measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) and a higher score on these scales means that the negotiator experience more preparedness, stress, and distraction

** Perception of danger was measured on a 7-point likert scale (1 = strongly disagree, 7 = strongly agree) and a higher score on this scales means that the negotiator experienced more perception of danger

Table 2b

Mann-Whitney Test regarding 'Performance' on 'Both Training Conditions' (N= 44)

	Training with Examp	Training without Exam	Mann-Whitney Test	
	M Rank	*M Rank*	*Z*	*Asymp.Sig. (2-tailed)*
Objective Performance*	24.32*	20.68*	-1.07	.29

* Results are based on 6 choice options during a virtual reality crisis negotiation (Right Choice = 1, Wrong Choice = 0)

Preparedness as Mediating Variable

Hypothesis 5a aimed to determine if the effect of training conditions on stress, distraction, feelings of danger and performance of novice negotiators within the virtual crisis negotiation can be explained through the preparedness level of novice negotiators. To assess the hypothesis a simple mediation analysis was conducted using Model 4 of the PROCESS 3.4.1 macro (Hayes, 2012) with 5000 bootstraps in SPSS. The effect of both training conditions on stress, distraction and performance through preparedness showed no significant indirect or direct effect (for further details see Appendix F).

In the mediation model, the positive direct effect of both training conditions on the perception of danger was significant ($\beta = .54$, $t(42) = 2.89$, $p = .006$, 95% CI [.16, .92]). Novice negotiators participating in the training condition without examples experienced higher perceptions of danger during the VR crisis negotiation than novice negotiators in the training with examples. The relative negative indirect effect of both training conditions on the experienced perception of danger of the novice negotiator through preparedness was significant as the confidence interval did not include zero ($ab = -.14$, 95% CI [-.38, -.004]). The training

condition with examples prepared the novice negotiators more than the training without examples, showing a difference of -0.31 in preparedness level. A higher feeling of preparedness leads to a higher perception of danger whereas a lower preparedness level causes less perceived danger. This indicates that the training with examples prepares the novice negotiators better which results in higher perception of danger. Contrary to that the training without examples prepares the novice negotiators less which leads to a lower perception of danger. Therefore, preparedness acts as a partial mediator as examples increase preparedness and thus perception of danger whereas examples directly, without accounting for preparedness, lower the perception of danger. The model explained 21% of the variance of perception of danger (R^2 = .21, $F(2, 41)$ =5 .32, p = .01).

Figure 5

Visual representation of how preparedness mediates the effect of both training conditions on the perception of danger
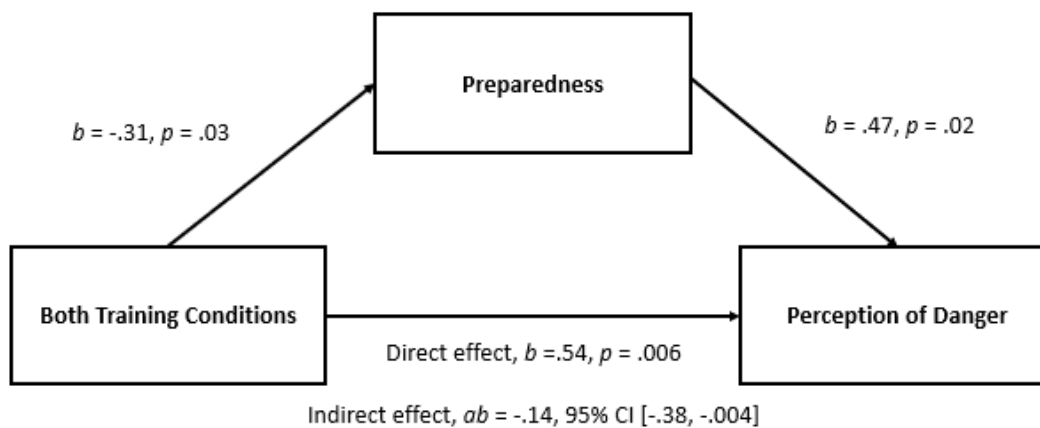
Discussion

This study aimed to determine if examples within the theoretical part of a crisis negotiation training are a helpful aid in the training of crisis negotiators. The assumption was that since knowledge acquired with examples can be better understood and applied during crisis

negotiations, the training condition with examples will help novice negotiators to feel less stress (H1), distraction (H2) and danger (H3), and to perform (H4) and be prepared better (H5), in a VR crisis negotiation. Furthermore, the assumption was made that the relationship between both training conditions on stress, distraction, perception of danger, and performance might be explained through preparedness (H5a). The main findings show that while the theoretical training with examples lowered the perception of danger (H3) and increased preparedness (H5) it also increased the perceived stress (H1) of novice negotiators compared to the training condition without examples during a VR crisis negotiation. Moreover, the training condition with examples prepared novice negotiators better which in turn heightened their perception of danger (H5a). Also, the training with or without examples did not influence the distraction (H2) and performance (H4) of the novice negotiators.

Effects of Examples in Theoretical Training

The training condition with examples increased stress, preparedness, and decreased the perception of danger experienced by novice negotiators during the virtual reality crisis negotiation compared to the training without examples. The conducted mediation analysis supports that examples directly increase preparedness and reduce perceived danger. However, the mediation analysis also demonstrated that a higher preparedness level increases the perceived danger and a lower preparedness level decreases the perception of danger a novice negotiator experiences in regard to a PiC and crisis situation. Thus, when preparedness is considered as partial mediator, being better prepared through examples increases the perception of danger whereas being less prepared through the absence of examples decreases the perception of danger.

Including real-life examples increases the likelihood that learned concepts will be successfully implemented in a real-life context, facilitating the exploration of effective strategies

and building confidence in one's competencies, which increases the perception of preparedness (Caroll et al., 2020; Hanafi et al., 2008; Rawson et al., 2015). In addition, examples enhance comprehension and cognitive skill acquisition helping novice negotiators to better understand the received information about the mental state and risk factors of the PiC in advance (Foshay, 2010; Renkl, 2013). Also, people can better evaluate potential risks and challenges associated with a situation when they receive real-world examples, leading to a decreased perception of danger if they believe they can effectively mitigate those risks (Rawson et al., 2015). However, examples describing detailed situations and characteristics of PiCs showing concerning behaviours may amplify the recognition of potential threats and uncertainty that an PiC or a high-stake crisis situation may pose, thereby increasing the experienced danger and stress (Grubb et al., 2021; Noesner, 2010; Rogan, 1997). The experience of acute stress can have positive effects like increased general alertness and enhanced mental and physical performance (Dhabar, 2018; Qi & Gao, 2020). However, according to the "Yerkes-Dodson Law " the beneficial effect of stress occurs when an optimal level of stress is perceived, which means that the perceived stress level cannot be too high or too low (Elbaek et al., 2022). Thus, optimal stress levels and increased preparedness may lead negotiators to examine the crisis situation more closely and recognise subtleties and potential threats that they may have overlooked without proper preparation (Foshay, 2010; Grubb et al., 2021). This heightened situational awareness may lead to a sharper sense of their surroundings, potential risks and nuances within the crisis negotiation, resulting in an increased perception of danger of the PiC and crisis situation. Future studies may investigate this relationship further.

The effect of both training conditions on performance and distraction was not significant. Reasons for the insignificant performance result could be that the training session in the VR

environment was too short and the training intensity too low as it included just a few choice options. Thus performance might not be effectively measured through the short duration and intensity, as the negotiating task was maybe too easy resulting in an almost perfect performance of all participants which led to a non-normal distribution. Also, the validity of the VR training is unknown as it was self-developed. Therefore, it might be that the VR training does not accurately simulate a crisis negotiation which means that the crisis negotiator's performance cannot be measured. Reasons why the distraction results were not significant may be due to the design of the study. Firstly, external distraction factors such as loud crowds or bystanders, were not present during the virtual crisis negotiation (Brown et al., 2019). Secondly, the crisis negotiation was unfamiliar and short, which kept the attention of the participants on the task and not on how they think they are performing. New and unfamiliar tasks help to keep attention whereas distraction usually arises after working longer periods of time on a task and when the task is known (Brown et al., 2019). After the crisis negotiation participants were often surprised at how quickly the crisis negotiation ended and mentioned that they sometimes did not realise that the crisis negotiation ended, which means that they expected they needed to focus for a longer time frame and actively avoid being distracted. However, to gain a deeper understanding of why the distraction measure and training were not significant, further investigation may be necessary.

Summarised, the study demonstrates that examples influence the perception of stress, danger and the level of preparedness experienced by novice negotiators. Thereby, the extent to which the novice negotiator is prepared has an influence on how the PiC perceives the danger during the crisis negotiation.

Limitations and Future Directions

Although the current study provided insight about the effectiveness of examples in theoretical training there are a few limitations that need to be considered. Also, future directions to investigate some findings further are proposed.

The first limitation concerns the current performance measurement, which is the VR environment that has been developed. Currently, this environment, even though it shows potential, should be considered as a prototype and some of the limitations described below were used intentionally because they either were beneficial or a result of the scope and time frame of the study. The current choices are limited and relate only to predetermined statements, which was intentionally used as the predetermined answers served the purpose of facilitating a more straightforward assessment of the provided responses. Moreover, it ensured a predetermined alignment with the techniques explained in the theoretical training, thereby enhancing the controlled nature of the assessment process. However, the current answer options of the performance measure were not challenging enough, resulting in a ceiling effect. Also, the performance measure was not statistically significant. Thus, the actual performance and the effect of examples could not be assessed. A more challenging performance measurement could be achieved by avoiding key terms like "empathy" in the response option or by allowing participants to formulate their own statements to increase learning effectiveness (Evans & Gibbons, 2007). Future studies could aim to increase the realism of the VR scenarios and provide more variety in the options. Moreover, the VR environment should be tested with real crisis negotiators who can give feedback about the realism and provide further knowledge about their own experiences during crisis negotiations (Noesner & Romano, 2002; Van Hasselt et al., 2008).

The study's second limitation was that the effectiveness of examples in theoretical training was only tested in regard to students acting as novice negotiators and not actual novice

negotiators, making it uncertain whether these findings extend to novice negotiators.

Nonetheless, it was shown that properly applied examples can have a positive contribution to the

learning process and real-life applicability which also helps novice negotiators (Braithwaite &

Goldstone, 2015; Kalyuga, 2005; Siegler & Chen, 2008). Moreover, incorporating examples into

training is easy to implement as it does not require any costs and can be used in a wide range of

domains (Rawson et al., 2015). Also, examples are versatile and can always be adapted

according to the situation, the learning context and the learner (Foshay, 2010). Thus, the use of

examples is a technique that everyone can apply. However, the effectiveness and applicability of

examples in the context of crisis negotiation training would have to be tested in future studies.

　　　　The third limitation of the study was that the focus was on a PiC who exhibited solely a

singular concerning behaviour, as the scope of the study could not cover several concerning

behaviours. Within the study, the concerning behaviour of suicidal tendencies was used as it is an

increasingly common behaviour during crisis situations (World Health Organisation, 2023).

However, crises involving individuals exhibiting concerning behaviours extend beyond mere

suicidal tendencies (Koekkoek, 2019). Often, in addition to suicidal intentions, these individuals

also exhibit mental illness and substance dependence, making their actions more unpredictable

and more likely to pose a danger to themselves and those in their immediate vicinity (Bulsink &

Potgieter, 2018). Therefore, there is a possibility that if the PiC within the virtual crisis

negotiation would represent other concerning behaviours such as delusions, paranoia or

hallucinations, the perception of danger of the negotiator may be higher than in the current study

despite the same training with examples. Furthermore, the amount of people involved during a

crisis negotiation can also have an influence on the perception of danger, preparation,

performance, stress and distraction. Additional people are a factor that increases unpredictability

and demands more attention from the crisis negotiator as they are exposed to more stimuli, which may make it more difficult to focus on the PiC (Grubb et al., 2021). Hence, the generalizability of the study's findings to other crisis negotiations involving PiCs who manifest different concerning behaviours need to be tested further.

In summary, the study showed that the inclusion of examples in theoretical training increases the learning effectiveness of crisis negotiation training. Example-based learning increased the preparedness and decreased the perception of danger regarding a PiC of novice negotiators. Even though the effectiveness of example-based learning refers to students acting as novice negotiators in the context of the study, the assumption can be made that examples would also enhance the learning effectiveness of actual novice negotiators. These findings are helpful in developing training for crisis negotiators as they give a first indication of how the theoretical part of crisis negotiation training can be improved. Nonetheless, whether these results apply to novice and experienced negotiators must be determined in future studies.

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Watson, A. C., Morabito, M. S., Draine, J., & Ottati, V. (2008). Improving police response to

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https://www.who.int/newsroom/factsheets/detail/suicide

Appendix A
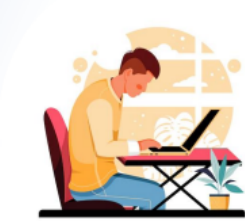
Training without Examples

We would like to ask you to imagine the following situation:

You are a police officer who has been trained as a crisis negotiator

o But what does it mean to be a crisis negotiator?

    o Crisis negotiators are police officers who did a special training where they learned how to negotiate during a crisis situation (e.g. hostages) and with people who experience a personal crisis (PiC)(being injured by an accident).

    o The task of a crisis negotiator is to resolve the current crisis sensitively and without hurting or harming anyone.

During your training to become a crisis negotiator some basic knowledge that you gained is

How to talk to a PiC that you can meet during a negotiation

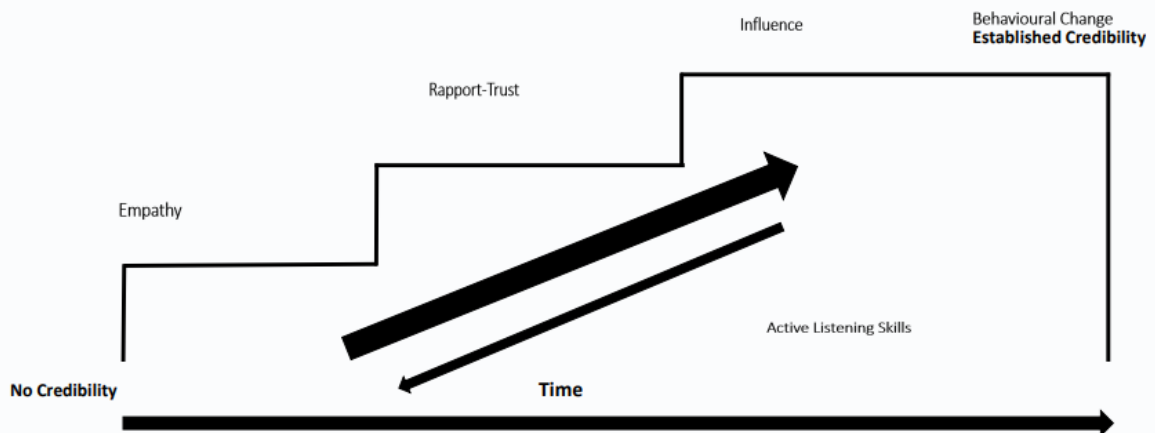How to categorise the type of PiC that you can meet

What happens if you make an error during a conversation?

How to talk to a person in crisis (PiC) that you can meet during a negotiation

Police officers often use the Behavioural Influence Stairway Model as a guideline during a crisis negotiation. The Model is used as it gives advice on how to act in front of a person in crisis so that, in the best case, the person's behaviour can be changed. Additionally, the model has been shown to be especially helpful for people in crisis with suicidal tendencies.

Behavioural Influence Stairway Model

Behavioural Influence Stairway Model

Active Listening Skills

The first stage is **Active Listening**, in which the negotiator listens to the PiC and provides a safe space allowing the person to confide to the negotiator. If the person in crisis feels safe, they are more willing to talk about their feelings and the reasons that led to the crisis. During this stage, it is the negotiator's task to take the perspective of the PiC and understand their concerns and needs. The negotiator should also show the PiC that they understand their perspective and are listening attentively. To do this, the negotiator should try to identify the main reasons that caused the PiCs crisis and the feelings they are experiencing during the conversation and repeat them.

Empathy

The second stage is **Empathy**. In this stage, the negotiator must try to understand the situation and feelings of the PiC and show it to them. If the negotiator shows an understanding of the situation and the feelings of the person in crisis, it gives the person in crisis the feeling that the negotiator is interested in them and is not judging them. Displaying genuine interest is important as the person in crisis will only accept the negotiator and listen carefully to them if they feel that the negotiator is interested in them.

Rapport-Trust

The third stage is **Rapport and Trust**. The development of rapport and trust can be simultaneously. Rapport is the created relationship between the negotiator and the person in crisis. This relationship is defined by good communication, sympathy and respect. The goal is to make the person in crisis feel comfortable and free to talk about their feelings and concerns. A good relationship creates trust, which makes the person in crisis more willing to listen to the negotiator and accept his advice. Trust makes the negotiator appear relatable and truthful.

Influence

Once the negotiator has reached the **Influence** stage, the negotiator can give advice to the PiC. The negotiator only reaches this stage if the previous stages have been completed and has thus gained credibility towards the PiC. Through influence, the negotiator can change the behaviour of the PiC and extract them from the crisis situation. Attempts to change the behaviour of the PiC should only be made in this stage, as only in this stage the negotiator has gained enough credibility to influence the behaviour of the person in crisis. Trying to change the behaviour in a prior stage can lead to a loss of the negotiator's credibility, causing the negotiator to have no influence on the behaviour of the PiC.

Behavioural Change

After succesfully incorporating the stages you managed to change the behaviour of the Person in Crisis!

How to categorise the type of PiC (Person in Crisis) that you can meet

A crisis can be caused by different triggers like a loss or a divorce, making each negotiation unique. Thereby, it is important to be aware that there is not one prototypical person who appears in every crisis situation. People experiencing a crisis often show concerning behaviour, which is often accompanied by suicidal tendencies. These people can be divided into three categories which are the **Bad**, the **Mad** and the **Sad**.

The Bad

People included in the category the **Bad** are caught during a criminal activity and they are only focused on themselves. These Persons have no underlying mental illnesses, their actions are only based on the desire to benefit their own lives. When these people get arrested, they may show suicidal tendencies as they prefer suicide over going to prison.

Therefore, if you get called to a negotiation with a **Bad** person you should never give them the opportunity to take the lead and therefore being superior to you. If this person notices that you are insecure, they will use it to their advantage. Therefore, it is important to appear confident and maintain the control and lead of the situation.

The Mad

The category the **Mad** includes persons who are mentally ill as they are often labelled as insane and experience hallucinations and delusions. In some cases, the experienced hallucinations and delusions are accompanied by suicidal tendencies.
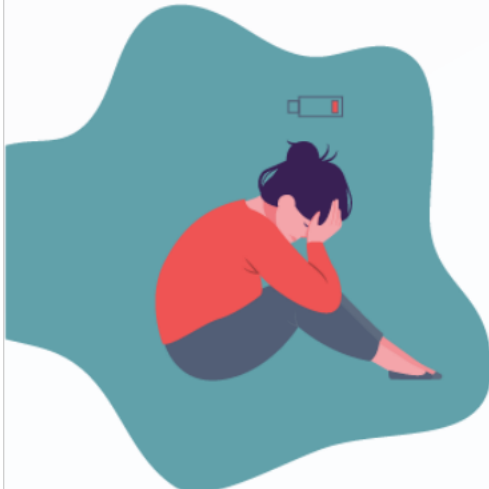
When talking to a **Mad** person, stay calm and listen to the person carefully. Avoid judging the person and making them feel like they are mad. If the person feels judged by you, they will not accept your help.

The Sad

People in the category the **Sad** are contemplating suicide and may be depressed or in a very stressful or distressing situation. People belonging to the Sad can also be criminals or mentally ill.

When you talk to a **Sad** person you should avoid hasty judgements and responses. Also, avoid criticising and giving advice to the person before a relationship has been established. Concentrating on the person's needs and not just the problem can also be helpful because focusing only on the problem can lead to the sad person getting blindsided and perceiving the problem as worse. Therefore, try to be calm and listen attentively during the conversation.

What happens if you make an error during a conversation?

Throughout a negotiation process, the negotiator can easily make communication errors regarding the person in crisis. These communication errors should be prevented or corrected if possible. Frequently occurring communication errors can lead to the person in crisis refusing to talk to the negotiator as they feel that they are misunderstood and not listened to. Communication errors that may happen include **Factual Errors** and **Judgement Errors**.

Factual Error

When a negotiator commits a **Factual Error** it means that during the conversation the negotiator states facts about the person in crisis that are not true or confuses these facts.

Judgement Error

A **Judgement Error** occurs when the negotiator is not listening properly during the conversation and thus cannot understand the PiC's responses correctly. Moreover, the negotiator is then not able to respond to the PiC's situation. Thus the negotiator may make a statement that contradicts the PiC's concerns or feelings. As a result, the negotiator appears insensitive and the PiC feels misunderstood.

How Can You Respond if an Error Occured?

If a communication error is made during a negotiation, it can be corrected using **Response Strategies**. Response Strategies have been proven to be an effective strategy to correct or compensate for a communication error made towards a PiC. Response strategies include **Apologising** or **Accepting** that a communication error occurred.

Apology

When an **Apology** is used as a response strategy, the negotiator apologises and explains why the communication error happened
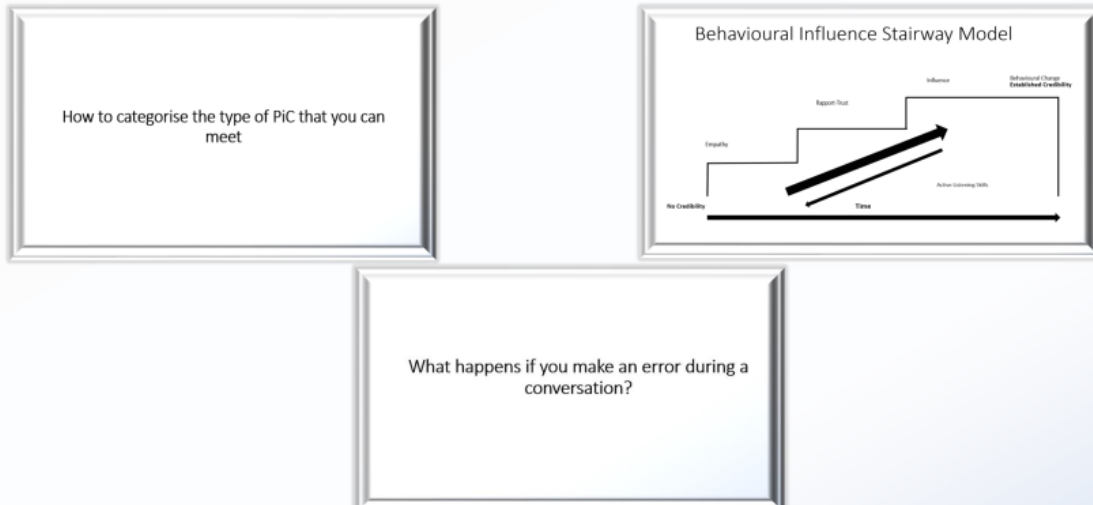

Accepting

When a negotiator is using **Accepting** as a response strategy after making a communication error, the negotiator recognises the error that has been made and admits that they have made an error. Recognising and acknowledging the error made is the priority of this response strategy.

If you would like to recap a skill, you can click on the according box below.

How to categorise the type of PiC that you can meet

Behavioural Influence Stairway Model

What happens if you make an error during a conversation?

Thank you for participating in the training. Now you have some basic knowledge about negotiating during a crisis situation.
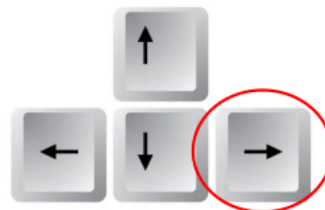
Appendix B

Training with Examples

We would like to ask you to imagine the following situation:

You are a police officer who has been trained as a crisis negotiator

- But what does it mean to be a crisis negotiator?
  - Crisis negotiators are police officers who did a special training where they learned how to negotiate during a crisis situation (e.g. hostages) and with people who experience a personal crisis (PiC)(being injured by an accident).
  - The task of a crisis negotiator is to resolve the current crisis sensitively and without hurting or harming anyone.

During your training to become a crisis negotiator some basic knowledge that you gained is

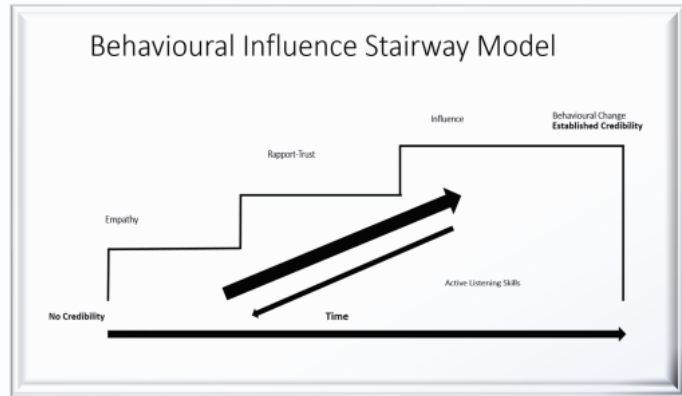How to talk to a PiC that you can meet during a negotiation

How to categorise the type of PiC that you can meet

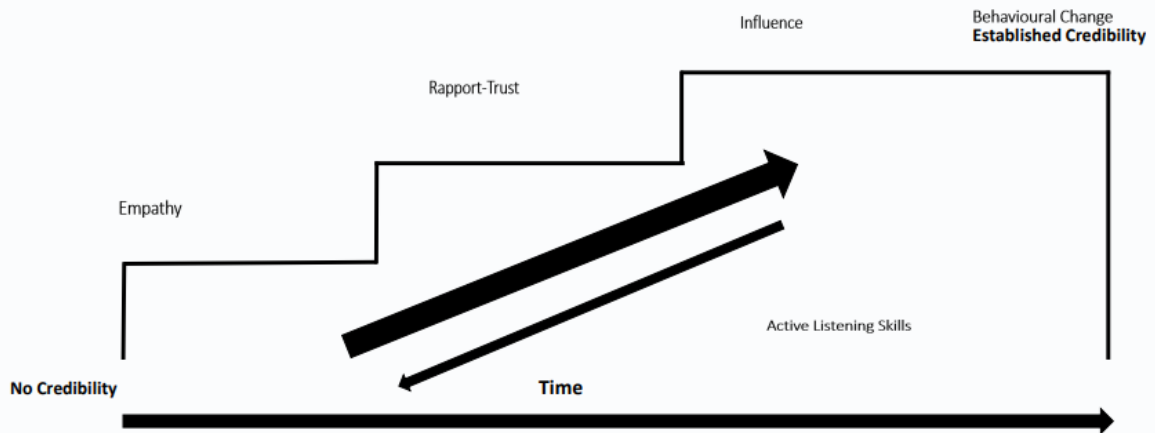What happens if you make an error during a conversation?

How to talk to a person in crisis (PiC) that you can meet during a negotiation

Police officers often use the Behavioural Influence Stairway Model as a guideline during a crisis negotiation. The Model is used as it gives advice on how to act in front of a person in crisis so that, in the best case, the person's behaviour can be changed. Additionally, the model has been shown to be especially helpful for people in crisis with suicidal tendencies.

Behavioural Influence Stairway Model

Empathy → Rapport-Trust → Influence → Behavioural Change / Established Credibility

Active Listening Skills

No Credibility — Time

Behavioural Influence Stairway Model

Empathy

Rapport-Trust

Influence

Behavioural Change
Established Credibility

Active Listening Skills

No Credibility **Time**

Active Listening Skills

The first stage is **Active Listening**, in which the negotiator listens to the PiC and provides a safe space allowing the person to confide to the negotiator. If the person in crisis feels safe, they are more willing to talk about their feelings and the reasons that led to the crisis. During this stage, it is the negotiator's task to take the perspective of the PiC and understand their concerns and needs. The negotiator should also show the PiC that they understand their perspective and are listening attentively. To do this, the negotiator should try to identify the main reasons that caused the PiCs crisis and the feelings they are experiencing during the conversation and repeat them.

For Example:

PiC: "I can't talk to my family about my problems because they don't really listen to me anyway. And when they listen, they get it all wrong."

Negotiator: "So you think your family is not listening to you and they don't understand you?"

Empathy

The second stage is **Empathy**. In this stage, the negotiator must try to understand the situation and feelings of the PiC and show it to them. If the negotiator shows an understanding of the situation and the feelings of the person in crisis, it gives the person in crisis the feeling that the negotiator is interested in them and is not judging them. Displaying genuine interest is important as the person in crisis will only accept the negotiator and listen carefully to them if they feel that the negotiator is interested in them.

An example of an empathetic statement would be:

Negotiator: "I understand how you would be hurt about that."

Rapport-Trust

The third stage is **Rapport and Trust**. The development of rapport and trust can be simultaneously. Rapport is the created relationship between the negotiator and the person in crisis. This relationship is defined by good communication, sympathy and respect. The goal is to make the person in crisis feel comfortable and free to talk about their feelings and concerns. A good relationship creates trust, which makes the person in crisis more willing to listen to the negotiator and accept his advice. Trust makes the negotiator appear relatable and truthful.
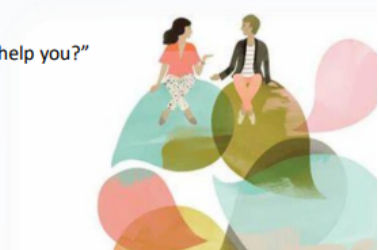
An example of rapport:

Negotiator: "Will you tell me more about yourself and why we are here?"

PiC: "I am here because…"

An example of trust:

Negotiator: "You have to believe me that I am here to help you. Will you let me help you?"

PiC: "Yes."

Influence

Once the negotiator has reached the **Influence** stage, the negotiator can give advice to the PiC. The negotiator only reaches this stage if the previous stages have been completed and has thus gained credibility towards the PiC. Through influence, the negotiator can change the behaviour of the PiC and extract them from the crisis situation. Attempts to change the behaviour of the PiC should only be made in this stage, as only in this stage the negotiator has gained enough credibility to influence the behaviour of the person in crisis. Trying to change the behaviour in a prior stage can lead to a loss of the negotiator's credibility, causing the negotiator to have no influence on the behaviour of the PiC.

An example of Influence:

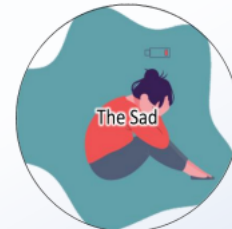Negotiator: "But before we can solve this we first need to drive you home. Will you come with me?"

PiC: "Okay."

Behavioural Change

After succesfully incorporating the stages you managed to change the behaviour of the Person in Crisis!

How to categorise the type of PiC (Person in Crisis) that you can meet

A crisis can be caused by different triggers like a loss or a divorce, making each negotiation unique. Thereby, it is important to be aware that there is not one prototypical person who appears in every crisis situation. People experiencing a crisis often show concerning behaviour, which is often accompanied by suicidal tendencies. These people can be divided into three categories which are the **Bad**, the **Mad** and the **Sad**.

The Bad

People included in the category the **Bad** are caught during a criminal activity and they are only focused on themselves. These Persons have no underlying mental illnesses, their actions are only based on the desire to benefit their own lives. When these people get arrested, they may show suicidal tendencies as they prefer suicide over going to prison. For Instance, if they get caught during an armed robbery, they would not lower their weapon and capitulate, instead they would point the gun at themselves and state an ultimatum. The ultimatum then might be: "Either you let me go or I kill myself".

Therefore, if you get called to a negotiation with a **Bad** person you should never give them the opportunity to take the lead and therefore being superior to you. If this person notices that you are insecure, they will use it to their advantage. Therefore, it is important to appear confident and maintain the control and lead of the situation.

The Mad

The category the **Mad** includes persons who are mentally ill as they are often labelled as insane and experience hallucinations and delusions. In some cases, the experienced hallucinations and delusions are accompanied by suicidal tendencies. A person who is hallucinating can be recognised as they perceive, see and hear things that are not there. While people with delusions also perceive things that do not exist, they may also think that they are another person or famous. Therefore, people in this category may start talking to a non-existent person during the negotiation or may not respond to their name because they do not perceive it to be theirs.

When talking to a **Mad** person, stay calm and listen to the person carefully. Avoid judging the person and making them feel like they are mad. If the person feels judged by you, they will not accept your help.

The Sad

People in the category the **Sad** are contemplating suicide and may be depressed or in a very stressful or distressing situation. People belonging to the Sad can also be criminals or mentally ill. Often people from the category of the Sad decide to commit suicide but are not completely convinced of their intention to die. Therefore, it is possible that these people are spotted on bridges and want to commit suicide by jumping.

When you talk to a **Sad** person you should avoid hasty judgements and responses. Also, avoid criticising and giving advice to the person before a relationship has been established. Concentrating on the person's needs and not just the problem can also be helpful because focusing only on the problem can lead to the sad person getting blindsided and perceiving the problem as worse. Therefore, try to be calm and listen attentively during the conversation.

What happens if you make an error during a conversation?

Throughout a negotiation process, the negotiator can easily make communication errors regarding the person in crisis. These communication errors should be prevented or corrected if possible. Frequently occurring communication errors can lead to the person in crisis refusing to talk to the negotiator as they feel that they are misunderstood and not listened to. Communication errors that may happen include **Factual Errors** and **Judgement Errors**.

Factual Error

When a negotiator commits a **Factual Error** it means that during the conversation the negotiator states facts about the person in crisis that are not true or confuses these facts.

An example of a Factual Error:

Negotiator: "Your work as a nurse is important."

PiC: "I am not working as a nurse."

Judgement Error

A **Judgement Error** occurs when the negotiator is not listening properly during the conversation and thus cannot understand the PiC's responses correctly. Moreover, the negotiator is then not able to respond to the PiC's situation. Thus the negotiator may make a statement that contradicts the PiC's concerns or feelings. As a result, the negotiator appears insensitive and the PiC feels misunderstood.

An example of a Judgement Error:

Negotiator: "Can you tell me more about your work."

PiC: "I already told you that I don't want to talk about my work."

How Can You Respond if an Error Occured?

If a communication error is made during a negotiation, it can be corrected using **Response Strategies**. Response Strategies have been proven to be an effective strategy to correct or compensate for a communication error made towards a PiC. Response strategies include **Apologising** or **Accepting** that a communication error occurred.

Apology

When an **Apology** is used as a response strategy, the negotiator apologises and explains why the communication error happened

An example of an Apology:

Negotiator: "Your work as a nurse is important."

PiC: "I am not working as a nurse."

Negotiator: "I am sorry, I think I understood it wrong. Would you tell me again what you work as?"

Accepting

When a negotiator is using **Accepting** as a response strategy after making a communication error, the negotiator recognises the error that has been made and admits that they have made an error. Recognising and acknowledging the error made is the priority of this response strategy.
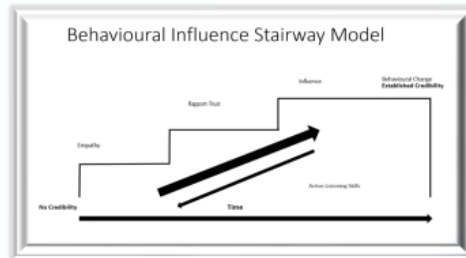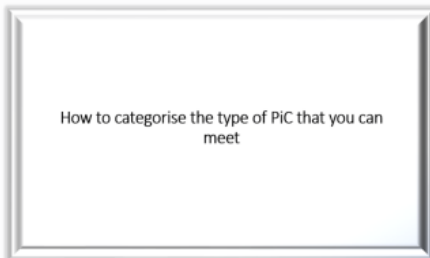
An example of Accepting:

Negotiator: "Your work as a nurse is important."

PiC: "I am not working as a nurse."

Negotiator: "You're right. I mixed it up."

If you would like to recap a skill, you can click on the according box below.

How to categorise the type of PiC that you can meet

Behavioural Influence Stairway Model

What happens if you make an error during a conversation?

Thank you for participating in the training. Now you have some basic knowledge about negotiating during a crisis situation.

Appendix C

Consent Form

Consent Form for Developing a VR environment to train police responses to persons with disturbed behaviour

YOU WILL BE GIVEN A COPY OF THIS INFORMED CONSENT FORM

Please tick the appropriate boxes	Yes	No
Taking part in the study		
I have read and understood the study information dated [DD/MM/YYYY], or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	O	O
I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	O	O
I understand that taking part in the study involves a digital role-play in a Virtual Reality (VR) environment and that the depicted behaviours might cause psychological distress. Further, I understand that my actions within the VR will be captured and used for research.	O	O

OPTIONAL (delete if not needed):

Risks associated with participating in the study		
I understand that taking part in the study involves the following risks: 1. Usage of VR might cause nausea or cybersickness for some people. 2.The scenario will depict a scene in which law enforcement and people with "disturbed behaviour" play a key role. I understand this, and that this might induce psychological distress.	O	O

Use of the information in the study		
I understand that information I provide will be used for the analysis of the performance of the VR environment, as well as for corresponding improvements.	O	O
I understand that personal information collected about me that can identify me, such as [e.g. my name or where I live], will not be shared beyond the study team.	O	O
I agree that my information can be quoted in research outputs	O	O

Future use and reuse of the information by others		
I give permission for the data concerning the VR performance and my actions within it that I provide to be archived in UT Cloud so it can be used for future research and learning.	O	O

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I agree that my information may be shared with other researchers for future research studies ○ ○
that may be similar to this study. The information shared with other researchers will not
include any information that can directly identify me. Researchers will not contact me for
additional permission to use this information. (Note: This separate consent is not necessary if
you will only store and share deidentified data.)

Signatures

_____   _____   _____
Name of participant [printed]   Signature   Date

I have accurately read out the information sheet to the potential participant and, to the best
of my ability, ensured that the participant understands to what they are freely consenting.

_____   _____   _____
Researcher name [printed]   Signature   Date

Study contact details for further information:
Jonah Sauer, j.a.sauer@student.utwente.nl
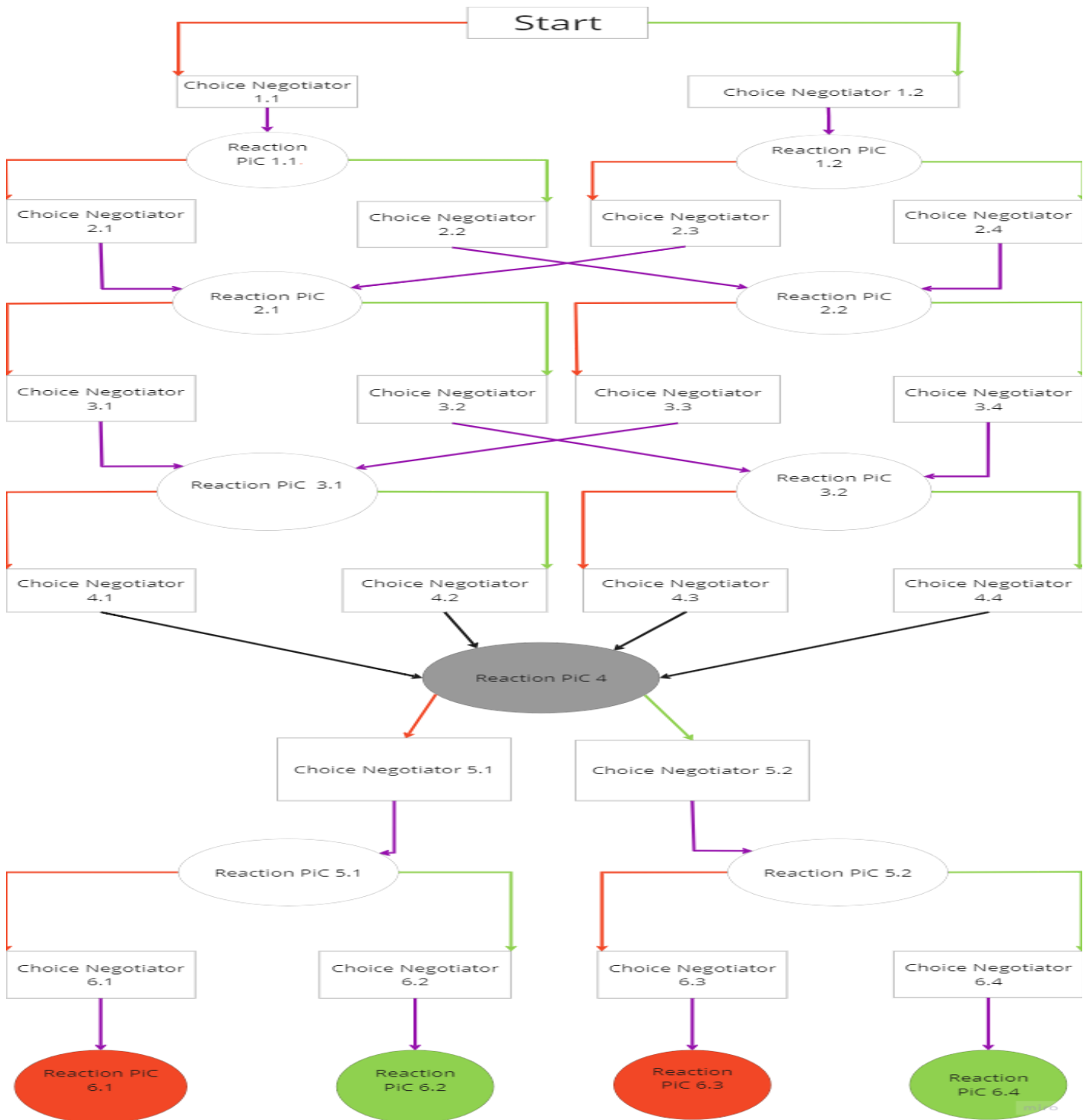*Seray Diken, s.diken@student.utwente.nl*

Contact Information for Questions about Your Rights as a Research Participant
If you have questions about your rights as a research participant, or wish to obtain
information, ask questions, or discuss any concerns about this study with someone other than
the researcher(s), please contact the Secretary of the Ethics Committee/domain Humanities &
Social Sciences of the Faculty of Behavioural, Management and Social Sciences at the
University of Twente by ethicscommittee-hss@utwente.nl

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Appendix D

Decision Tree VR Choice Options and Conversation

Decision Tree of the VR Crisis Negotiation

Table 3

Conversation Within the VR Environment

Choice 1.1		Choice Negotiator 1.2	
Response: Approach him Conversation: ...		Response: Asking to approach him Conversation: Hey, I want to talk to you and get to know you better. But it is hard to talk when you are so far away and we have to shout at each other. Is it okay for you when I stay in this distance?	

Reaction 1.1		Reaction PiC 1.2	
Conversation: [Surprised] Who are you? Why are you creeping up on me like that?		Conversation : The distance is fine but don't come any closer. I am Mike.	
Choice: 2.1. Reaction based on briefing (error) Response: Share the reason why you are on the roof Conversation: I got a call that a drunk person is on the roof. Please would you step down before you hurt yourself?	Choice: 2.2. Response: Ask him why he is on the roof Conversation: Im sorry for scaring you. I am here because I got told that a drunk person is on this roof. But you do not seem to be drunk, but rather very calm. Why are you up here alone, standing on the edge of the roof?	Choice 2.3. : Reaction based on briefing (error); thinking PiC is drunk Response: Share the reason why you are on the roof Conversation:I am here because I got a call that a drunk person is on this roof. Thus, I wanted to ask you why you are here? Could you also please step down from the edge of the roof before you accidentally hurt yourself? Then it will be easier to talk to each other.	Choice 2.4. : Reaction based on observation Response: Ask him why he is on the roof Conversation: I am here because I got a call that a drunk person is on this roof. But now that I see you, you do not seem to be drunk. You rather seem to be very calm and attentive. Therefore, I wanted to talk to you and ask you why you are here? Is that okay?

Reaction 2.1		Reaction 2.2	
more angry (still eye contact with negotiator) [more angry, eye contact] "Oh, so I am just another drunk person now... How can you judge me without listening to me? Why should I listen to you and step down upon your request?"		Response: accepts apology, less angry, eye contact, but still suspicious Conversation: Its fine, and your right I am not drunk. But I wont step down from the roof. If you want to talk to me you have to accept that I am not moving. Why do you even care?	

Choice 3.1	Choice 3.2:	Choice 3.3	Choice 3.4
Response: Trying to get the person to step down Conversation: Again, please step down and I will listen to what you have to say. You are drunk and at risk of hurting yourself.	[Apology] + "Are you committing suicide?" => differently formulated / too blunt (not error) => following: starts talking 1st stage of the model Response: Trying to talk to the person Conversation: I am sorry for wrongly assuming that you are	Response: Trying to get the person to step down Conversation: Again, please step down and then I will listen to what you have to say. You are at risk of hurting yourself.	Response: Trying to get the person to talk Conversation: You are very calm and don't seem to be drunk, but you are still standing on the edge of the roof. So please be careful. I just want to get to know you better. So, what are you doing

	drunk. So, what are you doing up here? You do not look quite happy. What is bothering you		up here? You do not look quite happy. What is bothering you

Reaction 3.1		Reaction 3.2	
What do you think? I dont think you actually listen to me. I did not drink and I am very well aware of this edge and I dont want to step down. Did you, for one second, consider that I want to end it all here? I am in debt and cannot cope anymore. I just got the final reminder that if I do not pay my debts they will impound our house... and now you come up to me ...		[Acceptance of Apology] Reaction to right Conversation: I am here because I wanted to be alone to think. I really dont know what to do anymore and I dont know why I should still try. I just got the final notice that if I do not pay my debts they will impound our house.	

Choice 4.1	Choice.4.2	Choice 4.3	Choice 4.4
Response: Showing that you care for his safety Conversation: I see that you have a lot of trouble going on in your life. However, please understand that I am first and foremost here to secure your safety. I really want to prevent you from hurting yourself. Please step down from the edge.	[Apology] + right Response: Showing empathy for his situation Okay, I am sorry for that... Listen, having problems with your finances to such a degree is something that happens.. It is understandable that you are feeling overwhelmed by it. However, there is no need to feel ashamed of having debts	Response: Showing that you care for his safety Conversation:I see that you have a lot of trouble going on in your life. I want to help you to solve these problems. Did you try to reach out to a debt consultant? Please understand that I really want to prevent you from hurting yourself. Please step down from the edge.	Response: Showing empathy for his situation Conversation: It is understandable how you would be worried and feel hopeless about that. You dont need to be ashamed about it. This is a difficult situation and you seem to be stuck.

Reaction 4
[Resignment, apathy, hopeless] Conversation: You just dont understand my situation. Why would you be able to help me? I feel that you are just trying to get this done as quickly as possible. If I step down, I will be left alone with my problems again anyways.

Choice 5.1	Choice 5.2
Response: Mention consequences of suicide to him Conversation: You might be right in that you are alone with your problems again afterwards. However, I also know that you might put a lot of sorrow on your family if you do not step down now. Did you think about how they might feel when decide to leave them?	Response: Acknowledge his feelings Conversation: That you are feeling angry and misunderstood is understandable/ normal. But you have to believe me, I am here to help you. I can only help you if you let me and trust me. Then we will find a solution together.

Reaction 5.1	Reaction 5.2
Resignment; getting sad; "I am of no use... and I still do not know how to escape all of this. I do not want to take the blame for causing my family such a situation...	Calming down I am sorry. I just dont know what to do anymore. I am feeling like everything I do makes my situation worse. I already tried everything. Also, my family does not know about our debts and I cant tell them. How should I tell them that we might lose

	everything.		
Choice 6.1	Choice 6.2	Choice 6.3	Choice 6.4
Response: Ask him to step down Conversation: You do not have to escape this. Ending it here would be even worse. Please step down and spare your family that sorrow.	Response: Offer him help Conversation: There is no need for blame. This seems to be a hard situation, but surely there is a way out. We can figure this out together, and I am sure your family will understand how this could happen. Should we go to your family together to talk to them?	Response: Ask him to step down Conversation: You should not blame yourself. You already tried to find a new job and you will find it. You just have to be more patient. But first you need to step down of the roof. After stepping down we can solve your problems.	Response: Offer him help Conversation: Don`t blame yourself. You already tried to find a new job and you will find it, just be more patient. Your family will understand the situation. But you have to talk to them. They might suprise you. Should we go to your family? Then you can talk with them...
Reaction 6.1	Reaction 6.2	Reaction 6.3	Reaction 6.4
Refuses to talk and demands another negotiator	Comes down	Refuses to talk and demands another negotiator	Comes down

Appendix E

Questionnaires

Table 4

Items of the Preparedness Scale: Based on the Section Training and Deployment Preparation

from the Deployment Risk and Resilience Inventory-2 (DRRI-2) (Vogt et al., 2012).

Item
The Negotiation Training has improved my understanding of the type of persons I can meet during crisis negotiations
The Negotiation Training has improved my understanding of how to act during a crisis situation.
The Negotiation Training has improved my understanding of how to react if I make an error.
I feel more comfortable when dealing with people experiencing a crisis situation after the whole training.
I was worried whether the person in crisis might try to hurt me or others during the conversation
I felt prepared to handle people in crisis that others might think are dangerous
I gained the confidence to negotiate during crisis situations after the whole training.

Table 5

Items of the Perception of Danger Scale: Dangerousness Scale (Penn et al., 1999)

Item
To what extent did you experience the feeling of danger during the negotiation with the person in crisis?
To what extent do you think the person in crisis is unpredictable?
To what extent do you think, one can't tell what the person in crisis will do from one moment to the next?
To what extent do you think it is important to be aware that the person in crisis is unpredictable?

Table 6

Items of the Stress Scale: Perceived Stress Scale 4 (PSS-4) (Cohen et al., 1983)

Item
To what extent did you feel upset during, or directly after the negotiation?
To what extent did you feel nervous during, or directly after the negotiation?
To what extent did you feel that the stress during, or directly after, the negotiation increased to such high levels that you could not let go of it?
To what extent did you feel tension during, or directly after the negotiation?

Table 7

Items of the Distraction Scale: On-Task Thoughts Items (Kanfer & Ackerman, 1989; Keith & Frese, 2005) and the Off-Task Thoughts Items (Kanfer & Ackerman, 1989)

| Items |
| --- |
| To what extent did you get distracted during the negotiation? |
| I found it easy to concentrate on the negotiation. |
| I found it easy to keep thinking about resolving the crisis situation. |
| My mind was busy trying to get the Person in Crisis to step down from the edge. |
| I could keep my mind on the negotiation. |
| I thought about how poorly I was doing. |
| I thought about how I should work more carefully. |
| I was thinking about my ability to perform negotiations during the encounter. |
| I thought about how I would feel if I were told how I performed. |
| I thought about how often I got confused during the negotiation. |
| I thought about what the experimenter would think of me. |

Appendix F

Mediation Models

The Effect of Both Training Conditions on Stress Through Preparedness

In the mediation model, the direct effect of both training conditions on the perceived stress a crisis negotiator is experiencing was not significant (β = -0.42, $t(42)$ = -1.76, p = .08, 95% CI [-0.91, 0.06]). The indirect effect of both training conditions on the perceived stress of a novice crisis negotiator through preparedness was non-significant as the confidence interval includes zero (ab = -.042, 95% CI [-.24, .12]. This means that preparedness did not significantly mediate the relationship of both training conditions on the perceived stress level of novice negotiators during VR crisis negotiations. The model did not explain the variance of the stress scores significantly (R^2 = .097, $F(2, 41)$ = 2.2, p = .12).

Figure 6

Visual Representation of How Preparedness Mediates the Effect of Both Training Conditions on Stress
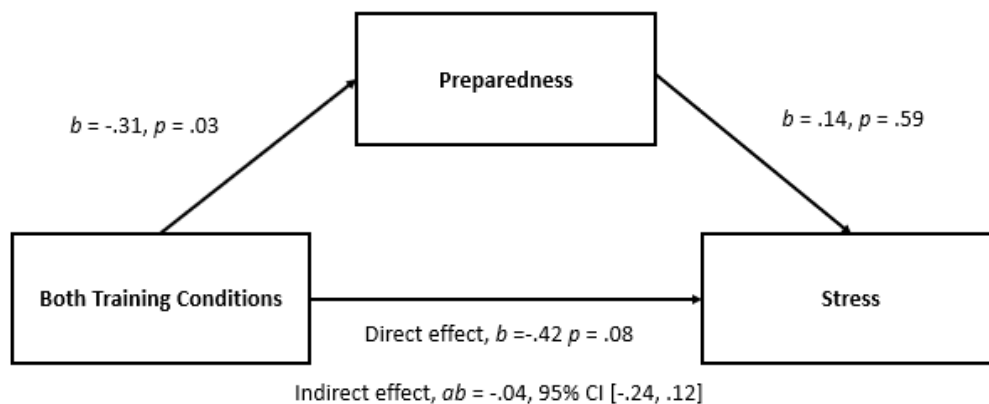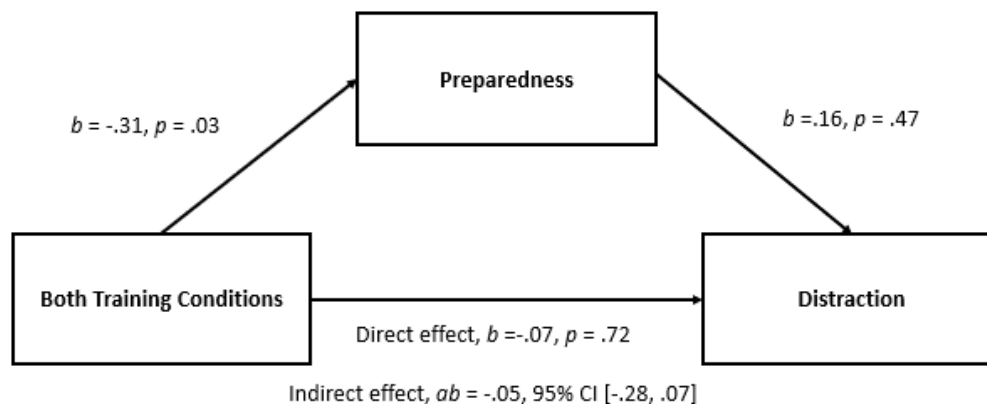

The Effect of Both Training Conditions on Distraction Through Preparedness

In the mediation model, the direct effect of both training conditions on the experienced distraction of the novice negotiator was not significant (β = -0.07, *t(42)* = -0.32, *p* = .75, 95% CI [-0.53, 0.39]). The negative indirect effect of both training conditions on the experienced distraction of the novice negotiator through preparedness was not significant as the confidence intervals include zero (*ab* = -.05, 95% - CI [-.28, .07]). This means that preparedness did not significantly mediate the relationship between both training conditions and the experienced distraction level. The model did not explain significantly the effect on distraction (R^2 = .02, *F*(2, 41) = .46, *p* = .63).

Figure 7

Visual Representation of How Preparedness Mediates the Effect of Both Training Conditions on Distraction

The Effect of Both Training Conditions on Performance Through Preparedness

In the mediation model, the direct effect of both training conditions on the performance of the novice negotiator was not significant (β = -0.33, *t*(42) = -1.37, *p* = .21, 95% CI [-0.82, 0.16]). The positive indirect effect of both training conditions on the performance of the novice negotiator through preparedness was not significant as the confidence intervals include zero (*ab* = .01, 95% - CI [-.18, .22]). This means that preparedness did not significantly mediate the

relationship between both training conditions and performance. The model did not explain

significantly the effect on performance ($R^2 = .04$, $F(2, 41) = .83$, $p = .44$).

Figure 8

Visual representation of how preparedness mediates the effect of both training conditions on

performance

Preparedness

$b = -.31$, $p = .03$

$b = -.04$, $p = .89$

Both Training Conditions

Performance

Direct effect, $b = -.33$, $p = .21$

Indirect effect, $ab = .01$, 95% CI [-.18, .22]