



Miriam S. D. Oostinga

BREAKING (THE) ICE:

Communication error management
in law enforcement interactions

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www.miriamoostinga.com

Cover design: Flashworks.nl - Kampen

Lay out: Flashworks.nl - Kampen

Printed by: Gildeprint.nl - Enschede

ISBN: 978-90-365-4493-1

DOI: 10.3990/1.9789036544931

Thesis, University of Twente, 2018.

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This work was funded by the High-Value Detainee Interrogation Group in the US (J-FBI-10-009, J-FBI-13-092) awarded to Paul Taylor and Ellen Giebels. Statements of fact, opinion and analysis in this dissertation are personal and do not reflect the official policy or position of the HIG or the U.S. Government.

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COMMUNICATION ERROR MANAGEMENT
IN LAW ENFORCEMENT INTERACTIONS

DISSERTATION

to obtain
the degree of doctor at the University of Twente,
on the authority of the rector magnificus,
Prof. dr. T.T.M. Palstra,
on account of the decision of the graduation committee,
to be publicly defended
on Thursday the 29th of March 2018 at 16.45 hrs

by

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This thesis has been approved by my supervisors Prof. dr. E. Giebels and Prof dr. P. J. Taylor.

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Chapter 1

General introduction

General introduction

In many high-stakes, police-civilian interactions, such as suspect interviews and crisis (hostage) negotiations, law enforcement officers use dialogue to encourage cooperation from the other side to attain their goals (i.e., finding the truth, peaceful resolution). Across experimental and field studies, researchers have shown that law enforcement officers are more successful at achieving this challenging task when they engage in rapport development (Donohue & Roberto, 1993; Walsh & Bull, 2012) and social influence (Beune, Giebels, & Taylor, 2010; Giebels & Taylor, 2009). For example, an experienced law enforcement officer notes:

'If the subject, John Jones is a skid row bum who hasn't had a bath in a month, I begin by calling him "Mr. Jones." I'll be the only guy in years who has... If the subject is John Jones, MD, the eminent neurosurgeon, I call him John—not disrespectfully, I just let him know he's in my house and we both put on our drawers the same way.' [p. 824, Redlich, Kelly & Miller, 2014].

As this example suggests, knowledge of this research is increasingly being integrated into daily practice and has influence on officer behavior.

Interestingly, however, while significant work has considered how officers should act, far less research is available on what they say, and perhaps also should say, when something goes wrong. This could occur, for example, when it turns out the suspect's name is not John but Johan. Or, when an officer uses an overly friendly tone with a neurosurgeon who expects and appreciates formality. It is important to understand the psychological and behavioral responses surrounding such error processes during law enforcement interactions. That is, we know from research in other domains, such as corporate brand crisis and leadership studies, that errors undermine a trusting relationship and cooperation if they are not appropriately responded to (Dutta & Pullig, 2011; Thoroughgood, Sawyer, & Hunter, 2013). My PhD project addresses this research gap in the Psychology and Law domain and

aims to 1) describe the type of errors made as well as the follow-up responses used by law enforcement officers, 2) understand the impact of errors on the suspect (the error receiver), but also on the law enforcement officers themselves (the error sender), and 3) determine the relative effectiveness of the responses.

By addressing these aims, I establish the groundwork for error research within this and other law enforcement domains on which future research can build an evidence base. Practically, I also begin to provide knowledge that can be used to prepare law enforcement officers for when error situations occur. In the next sections, I will elaborate on what I mean by communication error management and describe the suspect interview and crisis negotiation setting that I study. After that, I will position my studies within the general law enforcement interaction literature and focus on the perspectives of both the error receiver and the error sender. Finally, I will conclude with an overview of the chapters of my doctoral thesis.

Communication error management

In this thesis, I conceptualize the error management process event as involving four stages: 1) the law enforcement officer utters a message; 2) the suspect judges the message to contain an error; 3) the suspect (in)directly addresses the error; and, 4) the law enforcement officer realizes the error and responds. I make a distinction between the types of communication errors made and the response strategies used, as these appear to have a different effect on the dynamic pattern of the interaction. Following Oostinga, Giebels, and Taylor (2018-a) and theoretical frameworks and research (Bohus & Rudnicky, 2005; Halverson et al., 2011; Skantze, 2005; Vignovic & Thompson, 2010), I make a distinction between factual, judgment and contextual errors. Factual errors are messages in which the information is objectively wrong, such as the situation described above in which the name John is used instead of Johan. Judgment errors are messages in which the information is subjectively wrong or not in line with the expectations of the receiver. For example, in the situation described above this could occur when the neurosurgeon is approached informally, while he/she prefers a more formal

approach. Contextual errors are messages in which the law enforcement officer does not follow the appropriate police practices or procedures.

Next to that, following Oostinga et al. (2018-a) and the classification of Benoit (1997), I start by making a distinction between four types of responses: accept, apology, attribute, and contradict. Table 1.1 provides an example for each response strategy for the factual error made in the opening example. In an accept response, the error sender takes responsibility for the error and assures prevention of its future occurrence. In an apology response, the error sender takes responsibility and provides an explanation for why it occurred. In an attribute response, the error sender diverts responsibility to another party. In a contradict response, the error sender takes no responsibility.

Table 1.1 *Examples of response strategies*

Response strategy	Example
Accept	'You are right, I should not have used the name John'
Apology	'I am sorry for using the wrong name'
Attribute	'This is the name I got from my colleague'
Contradict	'I think you understood me wrong'

Law enforcement interactions

In the studies that are part of my thesis, I focus on suspect interviews and crisis negotiations. Before I discuss the specific type of these interactions that I examine, I give a brief description of each context and elaborate on their overlapping and diverging features.

Suspect interviews

To date, suspect interviews are still the most common source of information to determine what happened in a crime (Canter & Youngs, 2009). The goal of a law

enforcement officer in a suspect interview is therefore to collect information from a suspect to establish whether he/she committed the crime or not (Vrij, 2010). To gather this information, the law enforcement officer needs the other side to cooperate. To accomplish this, he/she can make use of interviewing techniques that reinforce a suspect to talk and focus on building a trusting relationship. Ultimately, the law enforcement officer wants to gather enough information that can be used as evidence to get a conviction in court. Due to these high stakes, law enforcement officers are always in a dilemma of exerting pressure to make the suspect talk about certain topics (e.g., the crime) or let them speak freely, even if that would mean they do not talk about these topics at all (Canter & Youngs, 2009). Ideally, they would only speak to guilty suspects in their interviews and they could focus on getting a confession. In practice, however, the suspects in their interviews are not necessarily the one who committed the crime. As a result, law enforcement officers in the Netherlands, among other Western countries, are strongly recommended to search for information and not focus on a confession. In turn, pressure tactics are discouraged, just like the use of deception and trickery, as these frequently lead to false confessions (Kassin & Gudjonsson, 2004; Vrij, 2010). The suspect on the other hand, may have different motives to cooperate or not, as providing information may have severe consequences. This may range from direct consequences in terms of actual punishment to more indirect consequences like the psychological impact of a conviction on the suspect's significant others (Verhoeven et al., 2017).

A total of 283.510 suspects were interviewed in the Netherlands in 2015 (Van Tulder, Meijer, & Van Rosmalen, 2015). Thus, in the Netherlands alone there are approximately 777 suspect interviews daily. This number does not include the times in which suspects are interviewed more than once and is therefore most-likely an underestimation of the actual number of interviews. The crimes of interest within these interviews were predominantly capital offenses (39%), violent and sexual offenses (23%), traffic offenses (13%), and destruction, and public order and authority offenses (12%). Dependent on the age of the suspect and the type of crime under investigation, these interviews are performed by

constables or specialized detectives in, for example, child, murder, sexual assault or human trafficking cases. In 2015, the complete operational police force of the Netherlands consisted of 50.509 fte's (Ministry of the Interior and Kingdom Relations, 2016). A position is considered operational if the police officer is in direct contact with civilians. Consequently, this number also includes receptionists and dog handlers, who's job description does not necessarily include the interviewing of suspects.

Crisis negotiations

Since the 1970s, law enforcement has recognized the value of using specialized negotiators to resolve personal crisis, hostage/barricade situations, and kidnappings. That is because it became visible that negotiating led to more peaceful resolutions than the use of a tactical intervention that placed a greater risk on victims (Noesner, 1999). The goal of a negotiator in a crisis negotiation is therefore to achieve behavioral change of the suspect with the lowest physical threat as possible. Within law enforcement, a distinction is made between instrumental and expressive incidents (Giebels & Noelanders, 2004; Noesner, 1999). In an instrumental situation, the negotiation itself predominantly focuses on discussing terms and conditions (e.g., about the ransom). This type of negotiation includes sieges, kidnappings and extortions. In an expressive situation, the negotiation itself focuses on ventilating emotions. This type of negotiation includes suicide attempts, barricaded persons, and domestic disputes (Giebels & Taylor, 2009; Vecchi, Van Hasselt, & Romano, 2005). This distinction is, however, not as clear-cut as these descriptions make it appear. For example, it is possible that a hostage taker may be high in emotions at the beginning of the incident, while becoming more rational in later stages. Thus, the focus may vary throughout the incident and therefore some incidents may better be described on a continuum from instrumental to expressive on which they slide back and forth (Taylor, 2002a, 2002b; Vecchi et al., 2005).

Although it is difficult to identify the exact number of crisis incidents, a recent estimation of the number of kidnapping and hostage situations is 600 per year.

This number is based on police records in the Netherlands over the period 1999-2008 (Knotter, 2014). Thus, in the Netherlands alone, there are approximately two incidents daily. Furthermore, this number likely represents an underestimation because it does not include the non-reported incidents, and incidents that may be classified differently (i.e. some of the more expressive oriented incidents). Since these incidents are spread over the country and it is very important for a crisis negotiator to be there as soon as possible, each police region in the Netherlands has several trained crisis negotiators available. Yet, being a crisis negotiator is not a full-time profession in the Netherlands, unlike in other countries like Germany (Giebels, 1999). Therefore, they combine being a part-time negotiator with other roles within their police department, which can range from police detective to manager. As a result, negotiators can receive a call to go to an incident while performing their other police duties or activities.

Suspect interviews vs. crisis negotiations

In the first empirical chapter of my thesis (Chapter 2), I discuss the results of interviews with professional crisis negotiators. As part of this interview, I asked what they see as the overlaps and differences between suspect interviews and crisis negotiations, as all interviewees had experience in performing both. Since the focus of Chapter 2 was on crisis negotiations, I had decided to not include this outcome in the study. Yet I will describe the outcome to this question in this section, as these similarities and differences might help explain the results of the other empirical studies in this thesis (Chapter 3 and 4).

Table 1.2 describes the overlapping and diverging factors between suspect interviews and crisis negotiations mentioned by the interviewees. Overall, these can be summarized in four overlapping and four diverging factors, and I will start by describing the former. First, in the initial phase of both types of interaction, the law enforcement officer seeks information; the interviewer wants to detect criminality and the negotiator wants to establish, for example, why that person is suicidal (Blaauw, 1998; Vecchi et al., 2005). Second, during this first stage, it is also unclear to the law enforcement officer what the motive and status of the

conversation partner is. Is the underlying issue more instrumental or expressive in nature (Taylor, 2002a)? Third, the law enforcement officer usually has had training in conversation techniques, emphasizing rapport building and asking open-ended questions. Fourth, the conversations are usually performed with at least two law enforcement officers present and with multiple stakeholders involved (Blaauw, 1998; Noesner, 1999).

Table 1.2 *Overlapping (top panel) and diverging factors (bottom panel) between suspect interviews and crisis negotiations*

Factors	Suspect interview	Crisis negotiation
Initial goal	Gathering information	Gathering information
Motive other party	Unknown: instrumental or expressive	Unknown, instrumental or expressive
Training	Conversation techniques	Conversation techniques
Parties involved	Multiple	Multiple
Initial lead	Law enforcement officer	Suspect
Ultimate goal	Gathering information	Behavioral change
Timing	Time to prepare	Ad-hoc
Medium	Face-to-face	Indirect contact

The interviewees also mentioned four major discrepancies between these two types of interaction. First, the initial lead in a suspect interview is the law enforcement officer, whereas the suspect typically has the initial lead in a negotiation. Or as an interviewee referred to it: *‘The entire interaction is a verbal power play in where the negotiator and the suspect are fighting about who is in charge.’* Second, the ultimate goal in a suspect interview is to gather information to find the truth and resolve a case, while in a crisis negotiation the main goal is to achieve behavioral change with the lowest possible physical threat. Third,

the interviewers usually have more time to prepare a suspect interview (e.g., to develop an interview plan), while a crisis negotiation is typically ad hoc and the negotiator is frequently informed about the case when they are on their way to the situation. Fourth, the medium of interaction differs, in that a suspect interview is mainly face-to-face while contact in a crisis negotiation is often via phone or social media.

Type of law enforcement interactions in this thesis

In my thesis, I focus on a more instrumental oriented suspect interview (exam fraud or theft) and a more expressive oriented crisis negotiation (barricaded suicide situation) for three reasons. First, these types of crimes are usually committed by one person (i.e., the suspect or suicidal person). As such, I can capture the communication behavior of the law enforcement officer (error sender) and suspect (error receiver) without the interference of other offenders, hostages or victims. Second, I cover a broad range of a law enforcement's communication behavior, as this ranges from gathering information to detect crime (suspect interview) to gathering information to provide care and help (crisis negotiation). Third, these types of crimes allow me to maximize the difference between these two contexts, so I can focus on this instrumental-expressive continuum.

General law enforcement interaction research

Over the past twenty years, research on suspect interviewing and crisis negotiation has switched its focus. In this section, I will describe how this switch has affected my work. In suspect interviewing research, the traditional focus was to identify biases in interviewing techniques and register errors. Over the last decade, however, there has been a direct call for research that focuses on 'what works'. For example, it was known that coercive interrogation techniques increase false confessions, but viable alternatives were not available (Meissner, Hartwig, & Russano, 2010). As a result, researchers started to examine what interviewing techniques law enforcement officers used and they then tested the

effectiveness of these techniques in terms of their capacity to support information gathering [e.g., Alison, Alison, Noone, Eltnib, & Christiansen, 2013; Meissner et al., 2014; Verhoeven, Duinhof, de Bloeme, & de Koning, 2017].

A similar trend is visible within crisis negotiation research, but this trend started approximately a decade earlier (Rogan, Hammer, & Van Zandt, 1997). Again, researchers started to draw attention to the lack of empirical studies that focused on the effectiveness of the techniques that were being used. This resulted in studies that tried to pinpoint the dynamic communication patterns within crisis negotiations (Rogan, 2009, 2011; Taylor, 2002a). Next to that, they provided a direction for establishing the effectiveness by assessing the other side in its context (Giebels & Noelanders, 2004; Taylor & Donald, 2004, 2007). This led, for example, to studies that focused on the effectiveness of influence strategies across distinct cultures (Giebels, Oostinga, Taylor, & Curtis, 2017; Giebels & Taylor, 2009).

All in all, this switch resulted in studies that focus not only on the negative aspects and the ultimate outcome of the interaction itself, but on the process by which such outcomes occur. If I position my studies within this academic timeframe, I clearly see how this switch in focus has affected my studies. Since there was no domain-specific research to build on, I started by interviewing professional law enforcement officers to establish what type of errors they make and how they respond to their errors (interview study, Chapter 2). This provided me extra input for searching the literature and I predominantly found studies in the organizational and management domain that focused on error management. I used this literature to determine what factors are crucial to assess when exploring the effects of errors and effectiveness of responses in a dynamic interaction over time. After that, I have tested the impact of the errors mentioned by the interviewees and the effectiveness of the responses in two follow-up laboratory studies by scrutinizing the other party's perspective on this phenomenon (error receiver studies, Chapter 3). Yet, I believe that the current trend needs a follow-up step if we want to change ineffective communication behavior of law enforcement officers. That is, to more completely understand what is going on, we should first

determine what drives law enforcement officers to use certain techniques. If we then find ineffective techniques being used, we may create training interventions that address the specific internal drivers that lead to these techniques being used. I took a first step in this direction in my last two field studies by examining the perspective of the error sender to determine the drivers to their error responses (error sender studies, Chapter 4). In the next sections, I will describe the error receiver's and error sender's studies in more detail.

Error receiver

Organizational and management research on error receivers suggests that errors and responses may affect cognitive, relational, and behavioral factors. At the cognitive level, I address the degree to which a suspect trusts the law enforcement officer, since errors may undermine the suspect's perception of the error sender's professionalism and dedication to the job (Vignovic & Thompson, 2010). I make a distinction between affective trust (i.e., perceived capability of empathizing) and cognitive trust (i.e., perceived capability of performing a task; cf. Conchie, Taylor, & Donald, 2012; McAllister, 1995). At the relational level, I investigate rapport and hostility, because errors may threaten the suspect's willingness to engage in interaction (Thoroughgood et al., 2013). I focus on rapport and hostility because these constructs capture the possible cooperative and non-cooperative relational orientations of the suspect (Drolet & Morris, 2000; Kleinman, 2006). At the behavioral level, I examine the suspect's willingness to provide information as well as their actual information provision, since these are direct measures of cooperation.

Error sender

In line with the error receiver studies and following research in the organizational and management domain, we focus on cognitive, affective and behavioral factors. At the cognitive level, I explore the extent to which making

errors leads law enforcement officers to experience stress or distraction, because research shows that erring may influence the task focus of an error sender (Dimitrova et al., 2014; Dimitrova, van Hooft, van Dyck, & Groenewegen, 2016). At an affective level, I assess the extent to which making errors leads law enforcement officers to experience negative affect (i.e., self-oriented anger, shame and guilt), since research suggests that erring increases negative emotions (Rybowiak, Garst, Frese, & Batinic, 1999). At a behavioral level, I analyze the type of responses law enforcement officers use after they have made an error, as this response is a direct measure of their communicative flexibility.

Overview of the studies in this thesis

Before presenting an overview of the studies in this thesis, I would like to make two remarks. First, the chapters in my thesis are written as individual manuscripts and may include some overlap in introduction or have a different focus as they were submitted to diverse types of journals. Chapter 2 has been published online in *Police Practice and Research* (Oostinga et al., 2018-a), Chapter 3 has been published online in *Psychology, Crime and Law* (Oostinga, Giebels, & Taylor, 2018-b), and Chapter 4 is currently under review. Generally, the different chapters built onto each other, but they can be read independently.

Second, the order of the different chapters needs some additional explanation. Chapter 3 focuses on the error receiver and Chapter 4 focuses on the error sender. I chose for this order, because the interviewees (Chapter 2) suggested that errors (can) have a detrimental effect on the interaction. So, I first wanted to establish whether that is true, and if so what detrimental 'means' psychologically, before testing the effect of errors on the error sender.

Table 1.3 provides an overview of the 5 empirical studies of my thesis and integrates the previously discussed sections. The first empirical study (Chapter 2) was conducted to create a body of knowledge to communication error management within crisis negotiation on which the following two chapters could build. Following the interviews with 11 crisis negotiators from the police,

this study provides a framework of communication errors that may happen and response strategies that are reported as being used within crisis negotiations. Besides, it provides insight into the expected psychological impact of errors on the error sender and the receiver.

The second and third empirical study (Chapter 3) were performed to unravel the receiver's perspective of communication error management within both suspect interviews and crisis negotiations (Study 3.1 and 3.2). Following two lab experiments with 188 and 184 students respectively, these studies explore the effect of law enforcement officers' communication errors and their response strategies on a suspect's trust in the officer; established rapport and hostility; and, the amount and quality of information shared. Study 3.2 builds onto Study 3.1 by examining the effects of the responses on the receiver's thoughts and perceptions to unravel why certain responses are effective.

The fourth and fifth empirical study (Chapter 4) were performed to discern the error sender's perspective of communication error management within both crisis negotiations and suspect interviews (Study 4.1 and 4.2). Following two field experiments with 133 and 68 professional law enforcement officers, these studies explore whether the making of a communication error increases law enforcement officers' stress, distraction, and negative emotions, and whether the choice of response depends on the law enforcement officer's cognition and affect. Study 4.2 builds onto Study 4.1 in three ways: 1) to examine the effect of the stance of the suspect (i.e., cooperative or non-cooperative) on the cognition and affect of the law enforcement officer, 2) to unobtrusively measure a law enforcement officer's physiological reaction during the interaction to assess the direct effect of making errors before a response is being used, and 3) to explore what the law enforcement officer's perceptions are of how the error is being received by the other side.

Chapter 5 presents the overall findings of this thesis in relation to my research aims, as described above. In addition, I discuss the academic implications and limitations of the five studies. I conclude the last chapter with an overview of the implications of my findings for practice and some final remarks.

Table 1.3 *Overview of empirical studies in this thesis*

Chapter	Perspective	Type of interaction	Sample	Method	Interaction medium
2	Error sender	Crisis negotiation	Professional negotiators (N = 11)	Interviews	-
3	Error receiver	Suspect interview	Students (N = 188)	3.1 Lab experiment	Online chat
		Crisis negotiation	Students (N = 184)	3.2 Lab experiment	Online chat
4	Error sender	Crisis negotiation	Professional negotiators (N = 133)	4.1 Field experiment	Telephone
		Suspect interview	Professional interviewers (N = 68)	4.2 Field experiment	Face-to-face

Chapter 2

'An error is feedback': The experience of communication error management in crisis negotiations

This chapter is based on:

Oostinga, M. S. D., Giebels, E., & Taylor, P. J. (2018-a). 'An error is feedback': The experience of communication error management in crisis negotiations. *Police Practice and Research*, 19(1), 17-30. doi: 10.1080/15614263.2017.1326007



The authors would like to thank Caroline Lennecke for her assistance with coding.

‘An error is feedback’: The experience of communication error management in crisis negotiations

For many police interactions, such as an interrogation or when dispersing a violent crowd, the main objective is to achieve a change in the behavior of the perpetrator (Taylor, 2014). This is particularly true for crisis negotiators, who use dialogue over a protracted interaction to encourage cooperation from a hostage taker, so that the crisis may end peacefully. An array of research has focused on what should be said and done in these type of interactions (Donohue & Roberto, 1993; Giebels, 1999; Taylor, 2002a; Vecchi et al., 2005), and more recent work has uncovered some of the individual differences that moderate the effects of these efforts (Giebels et al., 2017; Rogan, 2011). However, perhaps surprisingly, no research has considered what happens if an error is made in crisis communication. That is, there has been no systematic evaluation of the consequences of a message that the perpetrator perceives as wrong or inappropriate. Yet, in the heat of a crisis, it is inevitable that negotiators will mix up information or interpret a perpetrator’s behavior incorrectly. Understanding the consequence of such errors is important, since they may undermine the negotiators’ focus and compromise his or her relationship with the perpetrator. Moreover, it is important to understand the effects of error making on subsequent communication, since research in other domains suggests that you can repair an error by using the appropriate response (Benoit, 2013).

Given the centrality of errors to multiple policing tasks and contexts across the world, we examine error making and seek to make three contributions. First, we take an initial step in examining the issue of communication error management by explicating the kinds of errors that occur within crisis negotiations and the responses crisis negotiators use. Second, by doing this it seeks to build an evidence-base for understanding the impact of communication errors and the effectiveness of the different responses. Third, we seek to provide a clearer

understanding of the by the negotiator experienced error management process. From an academic perspective, this study provides an initial base that can be used to inspire future studies worldwide in this under researched area. From a practical perspective, the rich understanding of this process can inform the preparation of negotiators through training. That is, they will become more aware of what may happen if they say something in error.

Since there is little published understanding of communication error management in personal interactions, and none in relation to crisis negotiation, this evaluation cannot be achieved through a review of the literature. Rather, the best starting point for understanding the characteristics of errors that occur and how they are managed comes from the expertise of those who work in this field and may or may not have made such errors. As a number of scholars have argued, interviews are a justifiable method of gathering information when a new topic area is under scrutiny, and they are particularly suitable for disentangling the bigger picture (Eisenhardt, 1989; Silvermann, 1993). Consequently, this paper uses the results of 11 in-depth interviews to create an overview of the type of errors that police negotiators encounter, the types of response strategies that they may enact, and the intrapersonal consequences of these errors and responses. To direct our interviews, we searched the literature for features pertaining to these themes. Since no universally accepted definition exists, we define the process of communication error management as follows: the negotiator utters a message; the receiving perpetrator judges the message to contain an error; the perpetrator (in)directly addresses the error; and, the negotiator realizes the error and responds to it in a prompt or delayed fashion. It is important to note that we focus on the process of negotiation itself and not necessarily on the consequences of the errors in terms of the ultimate outcome of the negotiation.

We begin the next section with some background information on what we mean by crisis negotiation and follow this with a discussion of what is known about communication errors in other domains. We then give details of our methodology, the results of our interviews, and a discussion that addresses the limitations and implications of our study.

Crisis negotiation and sensemaking

Crisis negotiation is a protracted interaction between the police and a perpetrator in which the outcome is not necessarily a win-win solution, but rather a solution characterized by individual gains with win-lose structures (cf. Giebels & Taylor, 2009). The literature usually distinguishes between expressive and instrumental crises (e.g., Hammer & Rogan, 1997; Vecchi et al., 2005). Expressive negotiations are interactions typically high in emotions in which the negotiator 'helps' with the problem of the perpetrator. This kind of crisis negotiation includes suicide attempts, barricaded persons, and domestic disputes. Examples that have received media attention include the barricade and later suicide of Dr. Wanchai in Thailand (Asian Correspondent, 2016) and the hijacking of a Cairo-bound plane in Cyprus (McKenzie, 2016). Instrumental negotiations are interactions typically more rational in character and the negotiator 'bargains' for a transaction. This kind of crisis negotiation includes sieges, kidnappings and extortions (Giebels & Noelanders, 2004). Examples that have received media attention include the Porte de Vincennes siege in France (Witte, 2015) and the kidnapping of Arjan Erkel from the Netherlands (Van Zwol, 2005; see also Giebels & Taylor, 2009). In this study, we focus on both types.

Dependent on the type of incident, crisis negotiators seek to work in teams of 2-4 persons with different roles. The primary negotiator strives to maintain a cooperative dialogue while receiving assistance of others. He or she will often be supported by a second negotiator who feeds advice and information to the primary (Haag & Fresnel, 2015). At larger incidents, additional negotiators take on coaching and coordination roles that support the monitoring and logging of the dynamics of the unfolding incident. This negotiation cell works for an operational commander who manages the development of negotiation efforts alongside public safety, potential tactical interventions, and so on (Noesner, 1999). Apart from the negotiation and operational team, additional people may be present at the scene. These include a mental health consultant (Mohandie, 2012), an interpreter (Giebels & Taylor, 2012), the media (St-Yves & Michaud, 2012), and relations of the perpetrator (Giebels & Noelanders, 2004). The first two of

these may assist the negotiator in negotiating and become part of the team. The presence of the latter two may complicate the communication or place extra time pressure on the negotiation team.

The use of negotiators is viewed as an effective method to respond to crisis incidents, because the use of a tactical intervention is known for placing greater risk on victims (Noesner, 1999). To be effective, the negotiator must make sense of what is going on and engage with the perpetrator's needs perception of what is occurring (Wells, Taylor, & Giebels, 2013). According to Weick, Sutcliffe, and Obstfeld (2005, p. 409), this sensemaking can be defined as: '*... the ongoing retrospective development of plausible images that rationalizes what people are doing*'. It is a diligent process used to unwrap what is going on and determine what motivates the other person and, critically, what can motivate them to take a more cooperative position (Donohue & Taylor, 2003). Nonetheless, negotiators face unexpected twists and turns all the time (Weick, 1988) and an error in sensemaking may easily lead to an error in communication.

Communication errors

While there is no research on communication errors in crisis negotiation, the distinctions made in relation to errors and error management in other domains provides a useful background to the current investigation. A large body of literature on communication errors comes from human factors studies that seek to identify the root cause of errors in high consequence settings (Gibson, Megaw, Young, & Lowe, 2006; Lingard et al., 2004). For example, Rabol et al. (2011) identified a range of verbal communication errors that led to poor care implementation within Danish hospitals. They include direct errors in, and misinterpretations of, what was said, but also behavioral failures such as hesitancy in speaking up. While this classification and others within this literature are undoubtedly useful for the setting for which they are undertaken, their focus is on the macro level and so they stop short of identifying subtle communicative differences.

Studies of discourse from a range of areas have proposed frameworks for

classifying communication errors (Bohus & Rudnicky, 2005; Halverson et al., 2011; Skantze, 2005; Vignovic & Thompson, 2010). While each again focuses on the errors prevalent in the context being studied, most may be seen to identify three broad types: errors that stem from the general context (e.g. occasion, audience); errors related to the content of the message (e.g. misremembering facts); and errors related to judgments (e.g. etiquette norms, misunderstanding). Of these three types, it is arguably the last two that are most relevant to crisis negotiations because the error is situated on the perpetrator and is most likely to damage the interaction. These two forms of error, then, identify the need to consider both error as it relates to instrumental issues and error as it relates to changing the perpetrators' perceptions of the negotiators intentions or integrity. Consistent with research on the levels at which communication works in crisis negotiation (Taylor, 2002a), errors most likely occur at both the instrumental and relational level.

Error reconciliation

A number of studies from the management literature suggest that there exist a range of possible ways in which a communicator could reconcile an error (Reb, Goldman, Kray, & Cropanzano, 2006; Roschk & Kaiser, 2013; Smith, Bolton, & Wagner, 1999). Bohus and Rodnicky (2005) propose an instrumental, task-focused framework that identifies four forms of response: repeat, rephrase, change and contradict. In their work on organizational justice violations, Reb et al. (2006) examine responses such as providing an explanation, apologizing, and giving monetary compensation. Although each of these classifications highlight possible forms of error responses, they are largely tailored to the setting in which they occur, which makes them difficult to apply to a crisis negotiation context.

Consequently, we consider the five broad categories of Benoit (1997) as a solid basis for classification, as he provides an overview of possible message options rather than specific types. The five broad categories are: denial, evasion of responsibility, reducing offensiveness of event, corrective action and mortification. The first two responses focus primarily on diminishing responsibility, the second

two responses aim to reduce the perceived offensiveness of the act and the last focuses on forgiveness (cf. Benoit, 1997; 2013). An experimental line of enquiry (e.g., Dutta & Pullig, 2011) that built on this work support his argument that different error response strategies may seek to address different facets of the error effect, depending on the error makers' priority and understanding of the impact of their error.

Intrapersonal consequences

The possibility of different strategies for handling errors raises the possibility that negotiators may interpret the making of errors differently. Cognitive research (Bell & Kozlowski, 2008; Dimitrova, et al., 2014; Keith & Frese, 2005) suggests that error making disrupts the allocation of the available cognitive resources. This is likely to be particularly true when a person makes an error, the attention seems to divert from the task at hand towards the error. It may induce internal questions, such as why the error occurred, or what the consequences are and whether or not it was preventable. The literature suggests two main strategies to dealing with the cognitive impact of errors (e.g., Frese et al., 1991; Van Dyck, Frese, Baer, & Sonnentag, 2005). One is error prevention, which embraces the notion of bypassing errors altogether to overcome the negative consequences. The second is error management, which determines errors to be inevitable and focuses on the reduction of negative consequences and the increase of potentially positive aspects (e.g., learning). Research from Dimitrova et al. (2014) indicates that the extent to which this attention diverges from the task, depends on the adhered error handling strategy. Specifically, error management seems to lead to more on-task thoughts and better analogical and adaptive transfer performance than error prevention. Especially this focus and flexibility may be crucial in the management of communication errors in crisis negotiation, as in training the negotiators cannot be exposed to all situations that they are likely to encounter since every case is different.

Method

Procedure and respondents

Eleven in-depth interviews with police negotiators were conducted between December 2014 and June 2015. The negotiators were selected to represent the seven different negotiation regions in the Netherlands and they encompassed a variety of different backgrounds and experiences. The personal network of the second author was used to approach the first respondents, after which the snowball-technique was used to recruit others. Preceding the interview, the respondents received an email explaining the goal of the interview and the expected duration (approx. 60 minutes). The interviewees were assured that the information would be treated confidentially. All the police negotiators that were approached for an interview were willing to participate.

The respondents (6 males; 5 females) had a varying fulltime job ranging from police detective to team chief and from lecturer at the police academy to operational specialist. The respondents had over ten years' experience with the police (Range: 13 - 40 years) and varied in the years of experience as a negotiator (Range: 3 - 20 years). To assure the anonymity of the respondents, no further background details will be provided.

The interviews

The interviews were performed by the first author and took a semi-structured form. They were conducted face-to-face at a quiet venue, and lasted between 32 to 75 minutes ($M = 57$ minutes). Before conducting the interviews, the literature was studied and a general list of theory-driven themes to discuss, was created. The interviews focused on three different themes: the making of communication errors, the use of response strategies and the intrapersonal consequences of errors. These were complemented with some suggestions for how the error handling within crisis negotiation can be improved (the entire interview scheme is outlined in Appendix 2A). It is important to note that the interviewer did not ask for errors specifically but used more value-neutral words. The

interviewer referred, for example, to 'a mismatch in communication', 'difficult communication' or 'slips of the tongue'. The ethical committee of the University of Twente approved the research design and method. Before the starting of the interview, all interviewees provided informed consent.

The interviews were recorded and transcribed. The first author (i.e., the first coder) then used a grounded theory approach (Glaser, 2002) to examine the content of participants' answers, identifying salient features (i.e., viewpoints, working practices, expectations) and examples of errors and response strategies across the transcripts. An answer was considered salient if it clarified an important concept and/or if more than one interviewee mentioned it. Where features complemented each other, they were combined into a broader category. A second independent coder followed an identical procedure. Once highlighting and coding was completed, the two coders' analyses were compared, and differences discussed. This comparison and discussion led to a single, data-driven list of features that provided a test of the themes identified in the literature.

Regarding the classification of the errors, the first coder identified three categories, which correspond with: factual errors, judgment errors and contextual errors. The second coder identified six categories of which three had more than one example. These categories overlapped the categories of the first coder. The three categories that contained only one example were re-categorized after discussion in the judgment error category (see Table 2.1). For the response strategies, the first coder found three categories: apologize, contradict and accept. The second coder found four categories, of which the first three categories overlapped the categories of the first coder. After discussion was decided to include a fourth category: attribute (see Table 2.2).

Results

Types of communication errors and occurrence

All interviewees provided examples of mostly verbal communication errors

from their own experience. These examples varied from happening in the beginning of their career to more recent examples (i.e., in the past year). Most of these examples could be placed into three categories: factual errors, judgment errors and contextual errors. Table 2.1 illustrates these three types with examples. The example was classified as a factual error when the negotiator's message contained an error of fact. It was classified as a judgment error when the negotiator failed to behave in a way that recognized the thoughts and feelings of the opposing party adequately. This usually reflects the (improper) use of listening skills and thus poor alignment with the personal experience of the perpetrator. Finally, the error was classified as a contextual error when it related to a failure to adhere to police practices or procedures.

Most interviewees believed that communication errors take place in every crisis negotiation. Or as an interviewee said: *'Nobody is capable of performing a 100% perfect interaction. There is always something that goes wrong.'* They believed that the risk of making errors increased however when (1) the stakes were higher, (2) when the negotiator was struggling for power and (3) when there was a lot of information available. Altogether, these factors magnify the amount of possible distraction, being either internal or external, from the job at hand.

Table 2.1 *Examples of communication errors in crisis negotiations*

Type of error	Examples
Factual <i>Objective</i>	<p>When the police officer uses the wrong name of the offender or victim</p> <p>When the police officer mixes up the time and day of an event</p> <p>When the police officer addresses the two sons of a person and he/she only has one son and one daughter</p> <p>When the police officer assigns someone to be a fan of one football group, while he/she supports the other</p> <p>When the police officer says 'I have the ransom here', whereas 'here' is meant only symbolically</p>
Judgment <i>Subjective</i>	<p>When the police officer says 'I understand how you feel', while the situation is not understandable for the police officer</p> <p>When the police officer is in the problem-solving phase, whereas the relationship is not well-established yet</p> <p>When the police officer uses a filler like 'ok' after the message 'I want dead' of the perpetrator</p> <p>When the police officer tries to address a certain topic more than once and the perpetrator does not want to talk about that</p> <p>When the police officer is too direct in accepting or turning down the demands of the perpetrator</p>
Contextual <i>Police setting</i>	<p>When the police officer mentions the arrest team that is approaching the scene, whereas the opposing party should not know this</p> <p>When the police officer uses police terms, language, or procedures</p> <p>When the police officer asks too openly what can be done to help</p>

It is important to note here that we emphasized that we did not solely focus on the relationship between a communication error and the ultimate outcome of the negotiation. Some negotiators thought for example, that we were only interested in messages that led the other party to commit suicide or use violence against hostages. We clarified our concept and explained that we were interested in messages that disrupted the communication during the process as well. Moreover, we have received many examples in where the negotiator had to respond to something that was caused by the actions of someone else or was the result of their own behavior which was not related to the communication. In retrospect this was likely to happen, as crisis negotiators have to manage the unexpected all the time (Weick, 1988). Yet, this was not what we meant by a communication error and consequently left out of the analysis.

How bad are errors?

A few interviewees reported that the negative consequences of making an error depended on the type of error made. For example, simple factual errors such as using the wrong name were considered less problematic than relationally-focused errors, such as turning down the demands of the perpetrator in a dominative manner (i.e., a judgment error). This is in line with the findings of an organizational study from Vignovic and Thompson (2010) who found the same effects for errors in email contact, yet from a receivers' perspective. A few interviewees reported that errors made in the initial phase of a negotiation were more problematic. They argued that at this phase the relationship is already in tension and that, by making an error, the other side may become more emotional and less trusting. By contrast, later in the interaction the relationship is usually more stable and the negotiator can more easily explain why the error has been made (e.g., by suggesting that he or she is also becoming tired). Their experiences are consistent with the negotiation literature's distinction between the *crisis stage* and the *accommodation/negotiation stage* (Vecchi et al., 2005). An explanation for this experience may be found in the notion that errors tend to snowball. Once an error occurs, the chances of making another increases (Clark

& Brennan, 1991). Finally, some interviewees mentioned the mental and physical state of the opposing party. They argued that the making of errors may have a more detrimental effect when a suspect is anti-social, depressed or under the influence of alcohol or drugs.

We also noticed that most interviewees were cautious with classifying messages as errors. They explained that this term has a negative connotation which was inconsistent with their view that sending an erroneous message does not necessarily have to be detrimental. In particular, some interviewees mentioned that errors could have a positive effect on the interaction, largely because it would make them appear more human. For example, one interviewee argued: *'We should be cautious with becoming small talkers, who do not want to say anything wrong.'* A second suggested: *'Negotiating cannot be considered rocket science in anyway.'* An interesting point that was raised by several negotiators was that some errors are even made on purpose. For example, when the perpetrator does not respond at all to the attempts of a police negotiator to start a conversation, errors can be used intentionally to trigger certain emotions with the other party so that they start to talk (cf. Taylor & Donald, 2004). As one interviewee commented: *'An error is feedback.'*

Types of error responses

All interviewees provided examples of response sentences. These 'response strategies' could be placed in four broad categories: accept, apologize, attribute and contradict. Table 2.2 outlines these four forms of response with examples. The strategy 'accept' refers to a response when the police negotiator agrees that the message was wrong. The strategy 'apologize' refers to a response when the respondent apologizes for the error and provides an explanation for why this error occurred. The strategy 'attribute' refers to a response when the responsibility is shifted to a third party. The strategy 'contradict' refers to a response when the police negotiator denies the error and/or shifts the blame to the conversation partner. Three of the four strategies matched the classification of Benoit (1997). The attribute and contradict were similar to the two denial subcategories (i.e.,

shift the blame and simple denial) and apologize matched the mortification category. The category accept, however, did not fit any specific category.

The interviewees agreed that the use of a contradicting response is only worthwhile if it is necessary to set a boundary or condition. This may occur, for example, when the perpetrator is misinterpreting the words of the negotiator and holding the negotiator responsible for this. Otherwise, contradicting may only cause a – possibly negative – emotional response. As one interviewee commented: *'You're not creating a bond by picking a fight all the time.'* The use of apologies was most frequently mentioned as a response strategy by the interviewees, with the remark that apologizing is not something police officers normally do easily. As one interviewee remarked: *'Sorry seems to be the hardest word. Or at least, for some of us.'* A prominent reason for this difficulty was made clear by a second interviewee, who suggested that negotiators fear that an apology will give the interaction 'lead' back to the perpetrator. For example, the perpetrator may use the apology to rekindle his attack of the police's competence and integrity, moving the interaction back to conflict and away from a discussion of substantive issues. Discussion of substantive issues is the main goal in crisis negotiation, to move toward the problem-solving phase and end the situation in a peaceful manner (Pruitt, 1981; Vecchi et al., 2005).

Table 2.2 *Examples of response strategies in crisis negotiations*

Response	Examples
Accept	<p>You are right, my error</p> <p>I did not say that in a tactful manner</p> <p>That was a stupid remark of me, let's go back to where we were</p>
Apologize	<p>I am sorry, this is also thrilling for me, as it is a matter of life and death</p> <p>I am sorry, I think I did not hear it correctly. Can you explain that to me again?</p> <p>I am sorry, we have been standing here for so long, I sometimes make errors too</p>

Attribute	I misunderstood this from a colleague
	That is what they passed on to me
Contradict	No, that is not what I said
	I think you understood me wrong
	I may have been unclear

Finally, several interviewees mentioned that, if they sensed that the response strategy did not work, they would explicitly refer back to that moment. They felt that doing so showed that they genuinely cared and empathized with the perpetrator (e.g., *'I have the feeling that it is still hurting you'*). That this concern is genuine is very important, or as an interviewee said: *'It should not be a trick in a stress situation like that, because the other [perpetrator] will notice.'* According to Christophe Caupenne, former chief of the French RAID Unit, the voice can be seen as an 'instrument' of which you can modify the tone to influence how the messages come across (Haag & Fresnel, 2015).

Foreseeing and avoiding errors

Some interviewees mentioned the possibility of preventing errors before they occur by changing the original form of a message. A negotiator may use some form of ambiguity in the message to afford the other party the opportunity to address the issue in his or her own way. They may also use active listening skills after an utterance to determine whether and how the message was understood. As an interviewee commented: *'The magic word is still listening and taking the other seriously.'* In a different vein, some negotiators questioned whether or not it was always necessary to address errors. For example, some indicated that, when realizing that they had made an error, they instantaneously tried to distract the perpetrator before a reaction could be given, in the hope that they may not realize an error had been made. However, there was consensus that, if the negotiator's error did elicit a response, there was an obligation on the negotiator to respond to it in some way. This is in line with research from Williams (1999) who argues that

this feature characterizes skilled communicators, who choose their battles and know what to 'let pass'.

A few interviewees touched upon the effect of using a response strategy more than once. When a negotiator apologizes more than once in an interaction, the other person may feel exalted above the negotiator and the genuineness of the negotiator may be taken into question. As one interviewee identified: *'You're not working on a positive relationship by saying sorry five times in five minutes.'* So the effectiveness of a response strategy may be dependent on the frequency of using it.

Finally, negotiators unanimously agreed that lying should be prevented at all costs. One interviewee stressed that they are not allowed to promise the perpetrators anything, so the only thing that they can offer the other party is honesty. They commented: *'We need something from the other party, but the other one does not necessarily need something from me. The only thing I can really give them is my honesty and truthfulness. It is something I cannot repair after that it is taken away.'* This suggests that a diplomatic, indirect form of trying to talk things right may not be appropriate when both parties know that an error has been made.

Intrapersonal consequences of error management

Most interviewees mentioned that they experienced an adrenaline rush when making a communication error. This seems to decrease somewhat when the police officer gains more experience, but most of them agreed that this physiological response will never be absent, since the interaction is usually a matter of life and death. Most of the interviewees also agreed that the making of an error does not necessarily distract from the job at hand. In contrast, some interviewees argued that it intensified their focus and that they experienced some sort of cognitive 'internal switch' from a rational to intuitional mode. In this intuitional mode, the effect of certain messages is not calculated beforehand but is made in direct response to the messages of the opposing party. As one interviewee put it: *'It is like we are in some sort of new bubble. I have uttered the*

wrong words. Saying sorry about that is very easy.' This statement on the internal switch is in line with the findings of Dimitrova et al. (2014), who showed that this focus (on-task thoughts) may be the result of seeing errors as something you can learn from (i.e., an error management approach).

When the interviewees had to rate on a ten-point scale the extent to which they perceived the making of an error as problematic, they nearly all agreed that it depended on the situation. In a crisis negotiation where someone wants to commit suicide, it was the context that was leading. For example, the making of an error was considered to be less detrimental if the other party was inside a building (scored around 2 to 4) compared to when the other party stood on the edge of a roof (scored around 8 to 10). Apparently, do the consequences of the making of the error (i.e., context) influence to what extent the negotiators are adhering to an error management or error prevention approach.

A few interviewees indicated that they usually did not have the time to concentrate on the error within the conversation. If, however, they did experience some sort of distraction, it was the second negotiator that drew them back to the conversation directly. After the interaction, most negotiators did take the time to disentangle the conversation to some further extent and reflect on what happened. Whether they did this reflection with their complete team or just with the negotiators on the job varied per region. They all recognized the importance of reflection, but it was frequently not carried out, simply because they did not have the time to do so. Most interviewees reported that, when they found the time to discuss the negotiation, the atmosphere within the team and between team members was open and relaxed. They did not seek to attribute blame but rather focused on what everyone could learn from the error to improve their skills. As two interviewees commented: *'Everything is a good choice, the question is whether we could have done it differently'* and *'You are allowed to make errors in practice.'* This focus aligns again with the error management approach that can be found within an organization. Errors are then seen as something they can learn from, rather than characterized as something negative only (i.e., the error prevention focus; Van Dyck et al., 2005).

Ways to improve

At the end of the interview, we asked negotiators to reflect on how errors could be best addressed within negotiation teams. The interviewees offered four solutions. The first had to do with practicing and training. All interviewees agreed that this should be done more often. They suggested that negotiators should observe each other and reflect on what happens, so that everyone can learn from each other's errors. Research (Heimbeck, Frese, Sonnentag, & Keith, 2003) shows that this approach towards errors within training sessions indeed has a positive effect on – adaptive transfer – performance. Second, they mentioned ensuring that the negotiator's role and their associated equipment was set up in an optimal way to, for example, ensure that they had sufficient time and resources to effectively debrief on errors (cf. Spence & Millott, 2016). Third, they suggested a yearly check-up with a psychologist, to ensure that any emotional sequela of prior service is identified and managed. As one interviewee described: *'If someone decides to jump it is not because of what you said, it is because that person decides to jump. Otherwise you will go mad.'* This recommendation is consistent with Bohl (1992), who suggests a debriefing session with a psychologist to accompany each unsuccessful negotiation, in the same way that police officers receive support following incidents where death or serious injury occurred. Fourth, the interviewees acknowledged that the available knowledge in science should be used in a better way, for example, by discussing the newest scientific insights in training days. They recognized that already available knowledge within a team could be used to some further extent, like inserting an available psychologist on the team on a job where needed.

Discussion

So far, the focus of communication research within a crisis negotiation has been on messages that improve interaction and gain cooperation. This study focused on the other side of the coin, emphasizing situations where something is said in error and how this could be responded to. Our results offer six conclusions that can be used as a starting point for follow-up research: (1) communication errors as experienced by police negotiators can be classified as factual, judgment and contextual errors. Judgment errors are generally considered to have a more detrimental effect than factual errors; (2) when making a communication error, police negotiators are usually concerned but they also report that it makes them more focused on the interaction and the other side; (3) messages to respond to errors fall into four categories: accept, apologize, attribute and contradict. Apologize is mentioned as the strategy most often used; (4) for both errors and response strategies, negotiators have a contingency perspective emphasizing both positive and negative consequences of all utterances. Generally, errors are considered more detrimental when the relationship or the other side is 'unstable'; (5) using a response strategy more than once may diminish the effectiveness of the message, since it may influence the extent to which the police negotiator is viewed as credible and genuine; (6) notably, errors are sometimes made on purpose to increase or deepen the rapport with the perpetrator. This conclusion draws attention to the positive side of erring, which may be counterintuitive due to the stakes involved in these crises. Yet, the negotiators argue that it is a form of (negative) feedback, which has the potential to open up a conversation.

The types of errors identified by the negotiators in our study are, to some extent, particular to crisis negotiation. However, when construed broadly, they likely align with what occurs in other forms of police interaction with suspects and members of the public. This suggests that areas of policing that depend on public interaction may benefit from recognizing the different types of error and from considering the factors that underlie why such errors occur. Our

interviewees identified the 'magnitude of distractions', either internal or external, as being responsible for the making of errors. They pointed to both the multitude of people that are present at the scene with different interests and information (e.g., tactical team, media, relatives of perpetrator; Giebels & Noelanders, 2004; St-Yves & Michaud, 2012) and the struggle for control that occurs when the motivations and likely behaviors of the perpetrator cannot be predicted (Donohue & Taylor, 2003). These factors mirror the 'negative impact of timeframe' and 'complex influence of expertise' factors that have been shown to predict mistakes in other organizational contexts (Hunter, Tate, Dzieweczynski, & Bedell-Avers, 2011).

While equivalent factors may be responsible for errors observed across multiple contexts, we do not yet know whether the primary impact of these factors is on cognitive load, stress, or fatigue. For example, given the protracted nature of crisis negotiations (Giebels & Noelanders, 2004), it may be the case that errors occur over time as negotiators become fatigued. Consistent with this possibility, though not sufficient to rule out other explanations, is the recognition from our interviewees that saying something in error triggered them to refocus. Conversely, our interviewees identified errors as a form of feedback, suggesting that they may also reduce the cognitive demands of the interaction. Finally, by viewing errors as something to be managed, the erroneous messages begin to be something that can be overcome positively. This may be an advantage as it diffuses the fear and stress associated with errors, which likely has a negative effect on negotiators' communication. However, as Weick and Suttcliffe (2007) argue, this approach comes at a risk, since it may decrease negotiators' sensitivity to errors. If negotiators get to a point where reducing cognitive load and stress comes at the cost of not recognizing when errors occur, this puts their sensemaking at jeopardy, and ultimately the likely success of the negotiation.

Although our research raised some important themes for consideration, there are also some limitations that need attention. First, the number of interviews is limited. These may be representative for Dutch practices (every region was represented) but they may not be representative for crisis negotiation practices

worldwide. Second, some respondents indicated it to be difficult to come up with examples, because they did not consider errors to be critical incidents so that they did not stand out in their memories. It would be interesting to validate this perspective with a coding of errors in real negotiation transcripts. The analysis of the real transcripts would also provide us with the opportunity to test what occurs and whether the classification of errors as non-critical events is the right one. In terms of the outcome of the negotiation this may be true, but this does not necessarily have to account for the communication process itself. Third, it is worth noting explicitly that the error and response categories we identified were constructed from the perspective of the police negotiators themselves. It may well be that what negotiators label as errors, based on their police background, are experienced by perpetrators in a different way (cf. Clark & Brennan, 1991). For example, to a perpetrator, it may be the case that all errors are essentially relational because they do not align with the perpetrator's frame of reference. Future research should therefore focus on the perpetrator's perspective.

Conclusion

This is the first study to examine communication error management in crisis negotiations. The study's results served our objective of demonstrating the value of existing research on errors for thinking about high-risk interactions, while also highlighting how the unique features of the crisis context are key to understanding negotiators' approaches to erring. In particular, we provided a framework of possible communication errors that a negotiator may make and the responses he or she may give. This framework is valuable for both raising awareness of error making and for structuring future studies that seek to determine the relative effects and consequences of error response strategies. Importantly, however, while our findings identify what typifies current practice, it does not consider the receiver's perspective. It helps us understand how police personnel experience errors but it does not explicate what the effects of errors and responses are on the recipient's point of view. As a result, we stopped short of showing what consequences errors and response strategies

can have on the broader success of negotiation—although arguably it is unlikely that any one event, such as a particular error, could be attributed as the sole cause of an incident outcome (cf. Taylor, 2002b). A focus for the future, then, is better understanding the various roles errors can play in relation to recipient's perceptions and behavior, since this will help negotiators in their efforts to develop their error management strategies.

From a practical perspective, the framework we present in this study highlights errors as something that occur during negotiations and something that happens to everyone. It strengthens the argument to maintain the existing error management approach within the organization for both training and evaluation, and suggests that identifying ways to consolidate this approach in the future may be valuable. However, one note of caution is needed: it is possible that an inverse effect occurs when error management is adhered to rigidly. That is, if negotiators reach a point whereby they experience no stress when erring, this may decrease their focus and result in weaker performance (cf. Gutshall, Hampton, Sebetan, Stein, & Broxtermann, 2017). How to get the balance right is an important question for researchers and for practitioners moving forward.

Appendix 2A

The following are the questions asked during each interview.

1. **Background** (main goal: record the interviewees' background)

- What is your current job and position?
- For which team do you work?
- How much working experience do you have with the police?
- Can you give me an estimation of how many hours you speak to citizens per week/month/year?
- What type of conversations are this?

2. **Communication errors** (main goal: get some examples of communication errors)

- Our research focuses on the situations within a crisis negotiation in where the communication is not so fluent, did you ever come across such an incident?
- What happened from A to Z?
- How did the suspect respond to that?
- What was your reaction on that?
- Did it have any influence on your emotions?
- What did you feel?
- Did you get distracted from the job at hand?
- Did it influence your relationship with the opposing party?
- If I hear it is more of a ... misunderstanding. Do you have any other examples?

3. **Reflection** (main goal: unravel the repair strategies)

- If you look back at this situation, would you give a different reaction?
- You said you .. Do you think that <other strategy>> would have given another response?

4. Attitude (main goal: determine the respondent's error orientation)

- If you had to rate, on a scale from 1 to 10, how terrible would you find these situations, in which 1 is not a problem and 10 is disastrous, where would you score?
- Should errors be prevented at all costs?
- Can you learn from errors?
- Do you think that the making of errors also influences the suspect?
 - If so, in what way?
 - Is this dependent on the type of error?

5. General (main goal: determine the frequency of errors and education)

- How often do you think that errors are made within crisis negotiation?
- Are there certain aspects of the interaction that makes you err more?
- If you compare a crisis negotiation with a police interview, in which situation do you think that it happens more?
 - Why is that?
 - How often do you think that it happens within a police interview?
- Is error handling something that is touched-upon during your training?
 - If so, in what way do they do this?
 - Do you think that it gives you enough guidance to repair your errors?
- Do you have ideas on how the making of errors can be diminished?

6. Ending

- Do you have anything to add or do you have any other questions?
- If not, thank you for your collaboration!

Chapter 3

Communication error management in law enforcement interactions: A receiver's perspective

This chapter is based on:

Oostinga, M. S. D., Giebels, E., & Taylor, P. J. (2018-b).
Communication error management in law enforcement
interactions: A receiver's perspective. *Psychology, Crime and
Law*, 24(2), 134-155. doi: 10.1080/1068316X.2017.1390112



The authors would like to acknowledge the help of Angelique Haghuis, Juliette Laseur, Femke van Stratum, Caroline Lennecke, Femke Hilverda, and Wendy Schreurs.

Communication error management in law enforcement interactions: A receiver's perspective

Errors can have negative consequences for relationships and cooperation. Customers discredit firms and cancel purchases because of wrong information (Dutta & Pullig, 2011), while employees reduce the effort they make at work for a leader who has erred (Thoroughgood, et al., 2013). Arguably, the negative effects of errors are likely pronounced in law enforcement interactions where stakes are high and trust is low, since errors serve to confirm initial negative expectations (Beune, Giebels, & Sanders, 2009). Yet, as with everyday conversations, law enforcement officers will likely make errors. They may mix up names, incorrectly recall a suspect's circumstances, or make an inappropriate inference from what a suspect says. Indeed, US interrogators view trial and error as a common strategy for determining 'what works best' (Russano, Narchet, Kleinman, & Meissner, 2014), while European hostage negotiators view errors as inevitable and as a valuable form of feedback (Oostinga et al., 2018-a). Officers may also use different strategies following their error, and this may affect what occurs. Alison et al. (2013) have shown that failing to adequately address what a suspect considers an error undermines rapport and suspect cooperation (e.g., a suspect reverts to 'no comment'). It is thus important to consider both the effects of errors and the officer's behavior following the error.

In this article, we provide an initial experimental exploration of the effects of different types of communication errors and response strategies in two types of law enforcement interactions: suspect interviews (Study 3.1) and crisis negotiations (Study 3.2). We examine two contexts in recognition of the fact that prior work has shown that interviews, due to their focus on investigative information, are largely instrumental in goal focus, while negotiations, due to their focus on helping somebody in crisis, often have an expressive focus (Beune et al., 2010; Hammer & Rogan, 1997; Vecchi et al., 2005). We examine

both contexts by analyzing the interplay between law enforcement officer and suspect. Specifically, we conceptualize the error-recovery event as involving four stages: the law enforcement officer utters a message; the suspect judges the message to contain an error; the suspect (in)directly addresses the error; and, the law enforcement officer realizes the error and responds. We examine how the error and response made during this interaction may affect cognitive, relational and behavioral factors. At the cognitive level, we are interested in the effects of errors on the degree a suspect trusts the law enforcement officer, since trust is essential in the development of dependency between people (Ross & Wieland, 1996). We distinguish between affective trust (i.e., perceived capability to care for another person without self-interest) and cognitive trust (i.e., perceived trustworthiness and reliability for performing a task; cf. Conchie et al., 2012; McAllister, 1995). At the relational level, we are interested in rapport and hostility, since these capture the possible cooperative and non-cooperative relational orientations of the suspect (Drolet & Morris, 2000; Kleinman, 2006). At the behavioral level, we are interested in the suspect's willingness to provide information and their actual information provision, since these are direct measures of cooperation.

Since this is the first exploration of communication error management in law enforcement interactions, we tested with students. Using students in an initial examination afforded three advantages. First, the crimes of interest are relevant and 'close to the imagination' of students, who are overrepresented in the general population of people who commit crimes (Donker & Slotboom, 2008). Second, as several authors have argued (Kardes, 1996; Petty & Cacioppo, 1996), the use of students in tightly controlled designs is suitable when the research seeks to provide theory-driven groundwork on which future studies can build. Third, students have been used successfully before in studies in the suspect interview (cf. Beune, Giebels, Adair, Fennis, & Van der Zee, 2011, Russano, Meissner, Narchet, & Kassin, 2005) and crisis negotiation domain (cf. Giebels et al., 2017) with results corresponding to those found in field studies.

Communication errors

In their interviews with crisis negotiators, Oostinga et al. (2018-a) identified three types of communication error: contextual, factual and judgment errors. Contextual errors encompass messages that relate to police practices or procedures. An example might be using police tactical language or mentioning the approaching arrest team. Factual errors comprise messages that contain an error of fact and are objectively wrong. An example might be using the wrong name or date. Judgment errors covers messages in which the negotiator fails to reflect the thoughts and feelings of the perpetrator adequately and are subjectively wrong. An example might be trying to solve the problem when the perpetrator is still high in emotions or focusing too much on a topic that the perpetrator does not want to talk about. Here we focus on the last two types of errors, as they stem from the police-suspect exchange and the locus of control is the suspect.

As might be expected, research outside of the law enforcement officer-suspect interaction literature suggests that the consequence of both types of errors is negative. For example, in their study of leaders' errors, Thoroughgood et al. (2013) found that errors related to gathering information and problem-solving (i.e., kinds of factual error) and errors related to supporting, recognizing and rewarding (i.e., kinds of judgment error) decrease an employees' desire to work for a leader. This suggests that a law enforcement officer's errors may have a negative effect on the relationship between law enforcement and suspect because it will degrade the suspect's desire to engage in the interaction. Other work has shown that errors can have an indirect impact on perceptions of the error maker. Vignovic and Thompson (2010) found that factual and judgment (etiquette errors in their terminology) errors negatively affect a recipient's perception of the error maker's professionalism and dedication to the job. Critically, they found that judgment errors led to a more negative evaluation of the extent to which the error maker was capable of empathizing. Collectively, this research suggest that a factual error may undermine the perceived reliability of a law enforcement officer and threaten cooperation, while a judgment error will also lead the suspect to feel misunderstood or unappreciated. Consequently, we hypothesize that:

H1a: Compared to an interaction where no error is made, an interaction in which the law enforcement officer makes an error will be associated with greater suspect perceptions of law enforcement officer distrust, less rapport and more hostility, and less information provision by the suspect.

H1b: The predicted impacts of communication errors will be greater for a judgment error compared to a factual error.

Response strategies

Studies in marketing (Roschk & Kaiser, 2013; Smith et al., 1999) and leadership (Reb et al., 2006) suggest that the type of response used to reconcile an error may ultimately determine the attitude of the error receiver towards the error maker. The negotiators interviewed in Oostinga et al. (2018-a) reported three types of response: contradict, apologize and accept. Contradict refers to communication that denies responsibility for the error. Apologize refers to communication that apologizes for the error and takes responsibility. Accept refers to communication that agrees that an error has been made and assures prevention in the future.

Importantly, these three response strategies vary on three dimensions: (1) the responsibility that the officer takes for the error; (2) the extent to which the officer shows empathy for the other party; and, (3) the extent to which the officer assures prevention of the same error in the future (Dutta & Pullig, 2011; Fukono & Ohbuchi, 1998). The responsibility dimension differentiates contradict responses from apologize and accept responses, since in the former any association with the error is rejected, while in the latter some responsibility is acknowledged. The empathy dimension differentiates apologize responses from contradict and accept responses, since apologize is the only response that conveys some understanding of the other party. Finally, the prevention dimension differentiates accept responses from the contradict and apologize responses, since accept is the only strategy that suggests the error will be avoided in the future.

These differences in the thoroughness of the response suggest that an apologize and accept response strategy will be the most effective response since it deals with multiple facets of the 'offending' statement. By contrast, contradict is the most adverse. To fully understand what happens when an error is being managed, we are interested in the comparison between the different responses and the situation in which no error was made. Thus, we hypothesize that:

H2: Compared to an interaction where no error is made, an interaction in which the law enforcement officer contradicts the error will be associated with higher suspect perceptions of law enforcement officer distrust, lower rapport and more hostility, and less information provision by the suspect.

Study 3.1

Method

Participants

A total of 205 undergraduate psychology students from the University of Twente participated for course credit. This number was guided by a rule-of-thumb stopping rule that more than 25 participants per condition was sufficient and we had left some buffer for if they did not recognize the error. Because our definition of communication error management requires the receiver (the participant) to recognize the error, the first author and an independent second coder performed a content analysis of the participants' responses to determine whether or not they recognized and responded to the officer's error. They identified the same 17 participants as not explicitly addressing the error. In 14 cases this concerned a factual error (i.e., they agreed to being a Sociology student when they were not) and in 3 cases it concerned a judgment error (i.e., they agreed to being an unmotivated student). As we consider such identification crucial to the error management process, we excluded these participants from further analysis. Of the remaining 188 students, 54 were male (28.7%), 89 were

Dutch (47.3%; the others were German, $n = 98$, and Flemish, $n = 1$), and their mean age was 20.6 years ($SD = 2.17$).

Measures

Affective trustworthiness. We measured participants' post-interview affect-based trust for the interviewer (i.e., error maker) using three of the five items from Colquitt, LePine, Piccolo, Zapata, and Rich's (2012) affect-based trust scale. The two discarded items were not applicable to the current context because they referred to a long-term working relationship (e.g., 'We would both feel a sense of loss if one of us was transferred'). Specifically, participants were asked to rate, using a scale ranging from 1 (strongly disagree) to 5 (strongly agree), the extent to which they agreed with the following statements: 'The interviewer and I freely shared our ideas and feelings'; 'I can talk freely to the interviewer about problems I experience'; and 'The interviewer responded caringly when I shared my problems.' We created an affective trustworthiness score by averaging the scores on these 3 items. A high score on this scale means that the participant trusted the interviewer more.

Cognitive trustworthiness. We measured participants' post-interview cognitive-based trust for the interviewer using 5 of the 6 items from Colquitt et al.'s (2012) cognition-based trust scale. The sixth item, 'I can rely on my supervisor not to make my job more difficult', was not applicable to a suspect interviewing context because it focuses on the job setting. Participants were asked to rate, on a scale ranging from 1 (strongly disagree) to 5 (strongly agree), the extent to which they agreed with statements such as: 'The interviewer approaches the job with dedication' and 'I see no reason to doubt the interviewer's competence.' In the analysis we present, we decided to leave out this scale due to reliability concerns ($\alpha = .41$). Specifically, the fourth and fifth item appeared to be too general once translated into Dutch, and so did not appear to elicit trust perceptions of the interviewer as much as perceptions of the University system.

Rapport. We measured participants' post-interview perceived rapport with the interviewer using Vallano and Schreiber Compo's (2011) 9-item questionnaire. Participants were asked to rate, using a five-point scale ranging from 1 (not at all) to

5 (very much), the extent to which they viewed the interaction as being characterized by a series of adjectives, such as 'friendly,' 'positive,' and 'smooth.' We created a rapport score by averaging the scores on these 9 items. A high score on this scale means that the participant experienced a higher level of rapport with the interviewer.

Hostility. We measured participants' post-interview hostility toward the interviewer using Watson and Clark's (1994) PANAS-X scale. Participants were asked to rate the interviewer on a scale, ranging from 1 (not at all) to 5 (very much), regarding the extent to which they felt each of the following 6 negative emotion items: angry, hostile, irritable, scornful, disgusted and loathing. We created a hostility score by averaging the scores on these 6 items. A high score on this scale means that the participant felt more hostility towards the interviewer.

Willingness to provide information. Following Beune et al. (2011), we assessed the willingness to provide information by asking participants to report the extent to which they perceived the following to be true: 'I would tell the interviewer everything'; 'I would provide a lot of information to the interviewer'; 'I would give truthful information to the interviewer' (1 = strongly disagree to 5 = strongly agree). We created a willingness to provide information score by averaging the scores on these 3 items. A high score on this scale means that the participant was more willing to provide information to the interviewer.

Quantity of information provision. Research on the cognitive interview shows that the response length is a strong indicator of the amount of unique information in that account (Memon, Fraser, Colwell, Odinet, & Mastroberardino, 2010). For testing Hypothesis 1, we used the number of words uttered by the suspect directly after the error manipulation and before the response manipulation. For testing Hypothesis 2, we used the number of words directly after the response manipulation and before the next question. In line with Giebels and Taylor (2009), we took the frequency of the words as a proportion of the total words used across the whole interaction to control for individual differences in production. A high score on this measure means that the participant provided more information.

Quality of information provision. Although number of words uttered is a valuable proxy for information provision, it does not necessarily reflect the quality

of the information reported in terms of utility and validity. To address this, we examined the utility of information provided by rating each message on a 4-point scale as follows: -1 = suspect uses incorrect information or reinforces denial of the fraud (e.g., denies taking a peek into the exam, provides evidence for why he/she did not need to commit fraud); 0 = suspect circumvents the message (e.g., poses a contra-question, is vague, simple 'ok' or 'no problem'); 1 = suspect gives plain correct information (e.g., yes or no, mere denial in case of mistake); and 2 = suspect gives plain correct information and elaborates with information about the circumstances (e.g., explains which study he/she is doing, elaborates on personal background). Thus, the higher a message scores on the scale, the more valuable it is from an information gathering perspective. The first and second author independently applied this coding scheme to the suspect's response following the interviewer's error and the suspect's response following the interviewer's response strategy. This resulted in excellent agreement for the classification of the messages that followed the error (Cohen's $\kappa = .82$), and a sufficient agreement for messages that follows the response strategy (Cohen's $\kappa = .67$)¹. The remaining coding disagreements were discussed to determine a final code.

Alongside the variables described above, Study 3.1 also asked participants to respond to 3 open questions (e.g., how did you experience the error?) so that we could better design future studies. Study 3.1 and Study 3.2 also asked participants to reflect on how well they engaged in the task (e.g., how much did you get distracted during the interaction?) and how they experienced the relationship (e.g., the hierarchical power position compared to the interviewer). The original data is available at <https://doi.org/10.17026/dans-x6e-rv48>.

Procedure

The participants were provided with an exam fraud scenario close to the perception of the students (i.e., psychological realism; Evans, Meissner, Brandon,

¹ An initial coding of messages post-response led to poor agreement (Cohen's $\kappa = .15$), which we determined was the result of disagreement in interpretation of the answers 'ok' and 'no problem'. Agreement and re-categorization on how to code these answers resolved this problem.

Russano, & Kleinman, 2010): While participating in a study on personality assessment, the students were told that an exam they were about to take as part of their Psychology course was apparently accidentally left behind in the room. Due to the death of a close relative there was not enough time to study for the exam, so 'they took a peek'. Identification with the scenario was reinforced by showing a video with the event filmed from a first-person perspective. Participants were then told that the investigator of the study suspected them of exam fraud and had informed a member of the board of examiners of their suspicion. As this person, named 'Anne Bruinsma²', wanted to speak with them right away, they would be questioned online (i.e., via a chat utility on the computer). They were also told that it was not in their best interest to tell the truth due to the negative consequences of their act, which could include not being allowed to sit their exams and being expelled from further education.

The online interaction scenario has been used effectively in previous interviewing research (Beune et al., 2011) and it is known for having similar social influence processes present as real-life interactions (Hilverda, Kuttschreuter, & Giebels, 2017). For us it offers the opportunity to standardize the questioning of the exam board member and to exclude confounding variables such as the gender of the interviewer and nonverbal characteristics, such as tone and pitch. It also allowed us to assign participants randomly to a 2 (error type: factual, judgment) x 3 (response strategy: contradict, apologize, accept) between-subjects design, with a control condition in where no error was made. It provided the opportunity to measure actual and concrete responses of participants instead of intentions of behavior, which are the usual measure in vignette studies of error response (cf. Dutta & Pullig, 2011; Fukono & Ohbuchi, 1998).

Table 3.1 presents the messages that the interviewer used. After the chat session, respondents completed a questionnaire. They were then debriefed and credited for their participation.

² 'Anne' is a name used in the Netherlands for both males and females.

Table 3.1 *Overview of the messages used in the chat session in Study 3.1*

Messages	
Opening questions	1. 'What is your name, student number and day of birth?'
	2. 'Have you ever been suspected of exam fraud before?'
	3. 'Did you perform the fraud that you are accused of?'
	4. 'Can you tell me a bit more about that?'
Error manipulation	5. Factual: 'Ok. So you are a Sociology student.'
	Judgment 'Ok. So you are a rather unmotivated student.'
	No error: 'Ok. So you were indeed there during the study.'
Response manipulation	6. Contradict: 'I do not have it wrong.'
	Apologize: 'I had it wrong, I apologize.'
	Accept/no error: 'I have noted everything.'
Closing questions	7. 'Do you have anything else to add?'
	8. 'Ok. I believe I have enough information. I will contact you again in the near future to inform you about the procedure. Goodbye.'

Table 3.2 Means, standard deviations, and inter-correlations among study variables in Study 3.1 ($N = 188$)

Variables	M	SD	α	1	2	3	4	5	6	7
1. Affective trust	2.01	0.82	.72							
2. Rapport	2.88	0.53	.77	.54*						
3. Hostility	2.48	0.80	.84	-.25*	-.21*					
4. Willingness to provide info	2.22	0.99	.80	.59*	.37*	-.23*				
5. Quantity of info provision (after error)	0.12	0.11		-.10	-.12	.06	-.09			
6. Quality of info provision (after error)	1.07	1.08		.14	.12	-.10	.21*	-.36*		
7. Quantity of info provision (after response)	0.07	0.07		.08	-.08	.02	-.03	-.06	-.02	
8. Quality of info provision (after response)	0.11	0.63		.11	-.00	-.13	.19*	-.02	.11	.02

$N = 188$, * $p < .05$, calculated using 1000 bootstrapped resamples for each coefficient.

Results

Scale reliability

Table 3.2 shows the means, SDs, Cronbach alphas, and zero-order correlations among the study measures. As can be seen from Table 3.2, the measures have high internal reliability and there are positive correlations among affective trust, rapport, willingness to provide information and the quality of info provision following

error and response. As might be expected, each of these measures correlates negatively with experienced hostility. Interestingly, affective trust has the highest association with participants' willingness to provide information, as well as the quality of information provided following the error and response. By contrast, rapport is negatively correlated with the quantity of information provided after the response. These findings suggest that error making and the response strategies we tested had their largest impact through shaping of affective trust. Finally, the high negative correlation between quantity and quality of information after error suggests that more information quantity does not necessarily reflect information value.

Hypothesis testing

Error effects

Table 3.3 presents participants' perceptions and behavior as a function of the communication error to which they were exposed. To test our prediction that a communication error would negatively impact perceptions and behavior (H1a), and that this effect would be stronger for a judgment error compared to a factual error (H1b), we conducted a one-way MANOVA with communication errors as Independent Variable and the six effectiveness measures as the Dependent Variables. There was a significant multivariate effect of error type, $F(12,362) = 14.04$, $p < .001$, with significant main effects found for affective trust, $F(2,187) = 3.29$, $p = .040$, $\eta^2 = .034$, rapport, $F(2, 187) = 3.75$, $p = .025$, $\eta^2 = .039$, quantity of information provision, $F(2,187) = 64.22$, $p < .001$, $\eta^2 = .410$, and quality of information provision, $F(2,187) = 37.67$, $p < .001$, $\eta^2 = .289$. There was no significant effect for hostility, $F(2,187) = 1.82$, $p = .165$, $\eta^2 = .019$, nor for willingness to provide information, $F(2,187) = 2.51$, $p = .084$, $\eta^2 = .026$.

In comparison to the control condition, the making of a judgment error led to less affective trust, $t(41.52)^3 = -2.41$, $p = .020$, $d = -.517$, 95%CI [-.95, -.08]⁴, and less

³ Since the sample sizes varied per condition, we have decided to take the Welch's t-test instead of the Students t-test throughout this chapter (Delacre, Lakens, & Leys, 2017).

⁴ To calculate the effect size and their associated Confidence Intervals from the Welch's t-test, we have used the SPSS file of Wuensch (2012) throughout this chapter.

rapport, $t(67.06) = -3.26, p = .002, d = -.699, 95\%CI [-1.13, -.26]$, but, unexpectedly, to a greater quantity of information provision, $t(78.52) = 8.43, p < .001, d = 1.81, 95\%CI [1.30, 2.31]$. There was no difference in the quality of information provision, $t < 1$. A set of equivalent effects of lesser magnitude were observed for factual errors when compared to the control group, both for affective trust, $t(50.05) = -1.52, p = .135, d = -.334, 95\%CI [-.77, .10]$, and rapport, $t(71.62) = -1.98, p = .052, d = -.435, 95\%CI [-.87, .00]$. There was no difference in quantity of information provision, $t < 1$, but there was a higher quality of information provision, $t(38.02) = 6.75, p < .001, d = 1.49, 95\%CI [.93, 2.02]$. Judgment errors were associated with a greater quantity of information provision compared to a factual error, $t(116.29) = 10.61, p < .001, d = 1.69, 95\%CI [1.31, 2.07]$, but also with a lower quality of information provision, $t(123.73) = -8.75, p < .001, d = -1.39, 95\%CI [-1.75, -1.03]$. There was no significant difference for affective trust and rapport, both t 's < 1.3 .

Table 3.3 Means and standard deviations for interviewing effectiveness measures as a function of communication error in Study 3.1 ($N = 188$)

Effectiveness Measure	Communication Error					
	Control ($N = 29$)		Factual ($N = 72$)		Judgment ($N = 87$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Affective trust	2.32	0.89	2.03	0.86	1.88 ^a	0.73
2. Rapport	3.09	0.39	2.90	0.54	2.79 ^a	0.54
3. Hostility	2.41	0.82	2.36	0.75	2.60	0.83
4. Willingness to provide info	2.52	0.95	2.29	0.95	2.07	1.02
5. Quantity of info provision (after error)	0.05	0.07	0.06 ^b	0.04	0.20 ^{a,b}	0.11
6. Quality of info provision (after error)	0.72	0.80	1.81 ^{a,b}	0.52	0.59 ^b	1.17

^a Differs significantly from control, $p < .05$.

^b Differs significantly from the other communication error, $p < .05$.

Response effects

Table 3.4 presents participants' perceptions and behavior as a function of the response strategy to which they were exposed. To test our predictions that a contradict response will be less effective than the situation in where no error was made (H2), we conducted a one-way MANOVA with type of response strategy as the Independent Variable and the six effectiveness measures as the Dependent Variables. There was a significant multivariate effect of response type, $F(18,543) = 2.99, p < .001$, with significant main effects for affective trust, $F(3, 187) = 5.84, p = .001, \eta^2 = .087$, rapport, $F(3, 187) = 4.96, p = .002, \eta^2 = .075$, willingness to provide information, $F(3, 187) = 8.40, p < .001, \eta^2 = .120$, and the quantity of information provision, $F(3, 187) = 2.67, p = .049, \eta^2 = .042$. There were no significant effects for hostility, $F(3, 187) = 2.11, p = .100, \eta^2 = .033$, nor the quality of information provision, $F(3, 187) = 1.96, p = .121, \eta^2 = .031$.

When comparing the response strategies to the control, we found that an accept response after an error had a positive effect on participants' perceptions and behavior. Specifically, the effectiveness measures 'recovered' following an accept response to the level of the control group. That is, there were no differences between the accept and control group on affective trust, rapport, willingness to provide information or quantity of information provision (all t 's < 1.3). By contrast, when comparing apologize to control, we found that apologizing led to less rapport, $t(67.87) = -2.04, p = .045, d = -.471, 95\%CI [-.93, -.01]$, and willingness to provide information, $t(53.52) = -2.18, p = .033, d = -.504, 95\%CI [-.96, -.04]$, marginally significantly less affective trust, $t(48.23) = -1.77, p = .083, d = -.409, 95\%CI [-.87, .05]$, and no significant difference for the quantity of information provision, $t < 1$. When comparing contradict to control, we found that contradicting led to significantly less affective trust, $t(48.66) = -3.37, p = .001, d = -.776, 95\%CI [-1.25, -.30]$, rapport, $t(75.89) = -3.96, p < .001, d = -.912, 95\%CI [-1.38, -.44]$, and willingness to provide information, $t(51.91) = -3.29, p = .002, d = -.757, 95\%CI [-1.23, -.28]$, but no significant difference for the quantity of information was found, $t(58.93) = 1.63, p = .108, d = .375, 95\%CI [-.08, .83]$.

Table 3.4 Means and standard deviations for interviewing effectiveness measures as a function of response strategy in Study 3.1 ($N = 188$)

Effectiveness measure	Response Strategies							
	Control ($N = 29$)		Contradict ($N = 54$)		Apologize ($N = 53$)		Accept ($N = 52$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Affective trust	2.32	0.89	1.67 ^a	0.73	1.98	0.72	2.20	0.85
2. Rapport	3.09	0.39	2.68 ^a	0.56	2.90 ^a	0.47	2.96	0.55
3. Hostility	2.41	0.82	2.70	0.73	2.35	0.81	2.41	0.83
4. Willingness to provide info	2.52	0.95	1.82 ^a	0.85	2.05 ^a	0.87	2.65	1.07
5. Quantity of info provision (after response)	0.06	0.07	0.09	0.07	0.06	0.05	0.06	0.06
6. Quality of info provision (after response)	-0.07	0.53	0.26	0.85	0.06	0.46	0.10	0.53

^a Differs significantly from control, $p < .05$.

Additional explorative analysis

To explore any interaction effects between the communication error and response strategies, we conducted a two-way MANOVA with type of communication error and response strategies as the Independent Variables and the six effectiveness measures as the Dependent Variables. There was no significant multivariate interaction effect, $F(12, 298) = 1.30, p = .216$.

Discussion

As predicted, our analyses demonstrate that errors negatively affect a suspects' affective trust in the interviewer, and negatively affect the rapport between interviewer and suspect. Consistent with research in other domains, this was especially true for judgment errors whose relational-focus led to a worse set of suspect reactions compared to a factual error. We further found that apologizing for the error, and accepting that the error had occurred, were both more appropriate response strategies than contradicting the suspect. In comparison to the situation where no error was made, contradicting led to less affective trust, rapport, and willingness to provide information.

Of the accept and apologizing strategies, we found that accept was the more effective at repairing the damage done by the error. In contrast to apologizing, suspect perceptions and behaviors following an accept response were no different from suspects who were exposed to no error. The difference between these two strategies is important because it suggests that offering to 'correct the record' (i.e., the prevention dimension) plays an important role in the recovery process. This is perhaps not surprising within the interview context of Study 3.1 since the purpose of the interview was to gather information about what occurred. It remains, then, an open question as to whether this recover strategy will remain as effective within more 'expressive' law enforcement interactions (Beune et al., 2010), where the context is less information gathering and more resolving a suspect's aggression or crisis. In these contexts, the empathy dimension that distinguishes apologize responses may conceivably play a larger role.

Our findings also revealed a counterintuitive relationship: the making of a judgment error led to more sharing of information than the other errors. Although clearly unexpected, this finding may be interpreted through the same instrumental 'prevention' lens as the difference found across recovery strategies. That is, our suspects are choosing to respond to the error by providing more details (i.e., evidence) that they are correct. The error is paradoxically working to encourage disclosure. If this account of the observed relationship is correct, then

we might again expect it to be contingent on the type of law enforcement context. Errors may elicit a different response when the interaction is not oriented around information provision.

Study 3.2

Considering the possible contextual dynamics identified above, the goal of Study 3.2 was to replicate the findings of Study 3.1 within a more expressive crisis intervention interaction. We therefore tested the same hypotheses as Study 3.1. Additionally, however, we sought to better understand the effect of responses on the receiver's internal thoughts and perceptions (Nadler & Schnabel, 2015) by examining the extent to which effective responses replenish the receiver's fundamental social needs (Van Beest & Williams, 2006). As Williams et al. (2002) describe, one of the fundamental purposes of social interaction is to enable an actor to maintain their need for social belongingness, control, self-esteem and meaningful existence. A sense of belonging arises when a person has close relationships with others and a sense of control can be felt if a person has the power to, for example, engage in an interaction or not. A sense of self-esteem emerges when someone feels they are taken serious and someone feels that it is meaningful to exist if they sense their presence is important (Van Beest & Williams, 2006). Taking responsibility for the act and showing empathy or assuring prevention may indicate consideration for the other person's needs. By contrast, denying responsibility may show disregard for what the other person seeks or is thinking. Therefore, we hypothesize that:

H3: Interpersonal needs mediate the effects of response strategies on the perceptions of trust, rapport, hostility and information provision.

Method

Participants

A total of 234 students from the University of Twente participated for course

credit. As with Study 3.1, this number was guided by a rule-of-thumb stopping rule that more than 25 participants per condition was sufficient and we had left some buffer for if they did not recognize the error. We screened participants for whether or not they recognized the error. The first author and a second independent coder assessed participants' responses and agreed that 47 participants did not recognize the error (93% agreement). Of the 17 participants on which they disagreed, another 3 were excluded following discussion and agreement that they had not likely recognized the error. This resulted in 50 participants being removed from the data, spread evenly across factual (54%) and judgment (46%) errors. The remaining 184 participants were predominantly female (62.0%) and 114 were of Dutch origin (62%; German, $n = 69$, and Italian, $n = 1$). Their mean age was 20.8 years ($SD = 2.33$).

Measures

We retained the measures used in Study 3.1, except for some minor changes⁵. The content coding of the quality of information provision was undertaken by the first author and a second independent coder, who achieved excellent agreement for the classification of the messages that followed the error (Cohen's $\kappa = .94$), and a sufficient agreement for messages that follows the response strategy (Cohen's $\kappa = .69$). The remaining coding disagreements were discussed to determine a final code.

Social needs. To examine Hypothesis 3, we added a scale for measuring social needs. Specifically, we used 19 of the 20-item need threat scale from Van Beest and Williams (2006) to measure the four interpersonal needs: belongingness, self-esteem, control and meaningful existence. One item of the belongingness scale was not used (i.e., 'I felt like an outsider during the game') because it was too specific and could not easily be transformed to the interaction context. Participants were asked to rate on a scale from 1 (do not agree) to 7

⁵ We specified two items of the cognitive trust scale that after usage in Study 3.1 appeared to be asking about the University system in general instead of the interviewer.

(agree) statements that include: 'I felt as one with my conversation partner' (belongingness); 'During the conversation I felt insecure' (self-esteem); 'I had the feeling that I could say what I wanted as often as I wanted' (control); and 'During the conversation I had the feeling that my presence did not count' (meaningful existence). We created a belongingness score by averaging the scores on 4 items, and a self-esteem, control, and meaningful existence score by averaging the scores on 5 items each. A high score on these scales means that the participant experienced respectively more belongingness, self-esteem, control, and meaningful existence during the conversation.

Procedure

The procedure matched Study 3.1 except that we used a video-based scenario designed to mimic a crisis negotiation training simulation (Giebels et al., 2017). Participants were asked to imagine that they were a second-year student who was having financial problems, that they had to pay their tuition fees soon, but that they had no money to do so. They notice a cash box at an advertisement stand of a student association and decide to take it, but while doing so get caught by other students. Out of panic, they run, barricade themselves in a room, and shout that they have a gun. Identification with the scenario was reinforced by showing a video with the event filmed from a first-person perspective. Participants were then told that a police negotiator sought contact with them over the computer. After this, an online chat session equivalent to Study 3.1 but using the messages presented in Table 3.5 commenced. To ensure the ecological validity of the messages presented to participants, we based them on transcripts from actual police negotiation training. After the chat session, respondents completed a questionnaire, were debriefed and were credited for their participation.

Table 3.5 Overview of the messages used in the chat session in Study 3.2

	Messages
Opening questions	'Hi Anne from the police here, who am I talking to?'
	'I heard you have locked yourself in a room?'
	'And what about the theft?'
	'Can you tell me a bit more about that?'
Error manipulation	Factual: 'Ok. So this is the first time you are on campus.'
	Judgment 'Ok. So you stole out of boredom.'
	No error: 'Ok. So you study here at the UT.'
Response manipulation	Contradict: 'I do not have it wrong.'
	Apologize: 'I had it wrong, I apologize.'
	Accept/no error: 'I have noted everything.'
Closing questions	'Are you alone in the room?'
	'What do you plan on doing next?'

Results

Scale reliability

Table 3.6 presents the means, SDs, Cronbach alphas, and zero-order correlations among the study variables. As can be seen in Table 3.6, the reliability of the different measures was high and there were high positive correlations among the trust measures, rapport, and willingness to provide information scales. Consistent with Study 3.1, there were negative correlations between these measures and hostility. The fact that these positive correlations are consistent with previous findings that have drawn on different methodologies (e.g., Giebels & Taylor, 2009) suggests that our measures are capturing the psychological variables known to correlate with effective crisis negotiating. Moreover, the highest correlations between these effectiveness measures and the different

social needs is found with belongingness and meaningful existence. This suggests that the effectiveness measures were mostly impacted by these two needs.

Table 3.6 Mean, standard deviations, reliability, and inter-correlations among study variables in Study 3.2 (N = 184)

Variables	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12
1. Affective trust	2.38	0.96	.78												
2. Cognitive trust	3.11	0.66	.70	.54*											
3. Rapport	3.03	0.56	.78	.67*	.60*										
4. Hostility	2.74	0.70	.72	-.10	-.23*	-.23*									
5. Willingness to provide info	2.47	1.07	.87	.68*	.46*	.48*	-.18*								
6. Quantity of info provision (after error)	0.12	0.10		-.03	-.13	-.11	.10	-.05							
7. Quality of info provision (after error)	1.36	0.85		.12	.17*	.08	-.10	.28*	.20*						
8. Quantity of info provision (after response)	0.08	0.07		-.13	-.08	-.11	-.01	-.17*	-.13	-.12					
9. Quality of info provision (after response)	0.34	0.69		-.06	.00	-.09	.00	.04	.00	.03	.51*				
10. Belongingness	2.85	1.06	.72	.55*	.42*	.52*	-.25*	.51*	-.07	.21*	-.06	-.03			

Variables	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12
11. Control	3.32	1.34	.85	.27*	.20*	.29*	-.04	-.19	.08	.06	-.05	.04	.30*		
12. Self-esteem	3.66	1.10	.69	.11	.10	.20*	-.36*	.00	-.04	-.07	-.03	-.02	.22*	.36*	
13. Meaningful existence	4.01	1.31	.89	.48*	.44*	.52*	-.21*	.40*	-.03	.26*	-.02	.01	.48*	.45*	.15*

* $p < .05$, calculated using 1000 bootstrapped resamples for each coefficient.

Hypothesis testing

Error effects

Table 3.7 shows the perceptions of the participants toward the negotiator as a function of negotiator error. To test our prediction that communication errors have a negative effect on perpetrators' perceptions and behavior (H1a), particularly judgment errors (H1b), we conducted a one-way MANOVA with type of communication error as the Independent Variable and the seven effectiveness measures as the Dependent Variables. There was a significant multivariate main effect for error type, $F(14, 352) = 4.32, p < .001$, which was driven by the significant main effect of the quantity of information provision, $F(2, 183) = 18.01, p < .001, \eta^2 = .166$, and the quality of information provision, $F(2, 183) = 7.40, p = .001, \eta^2 = .076$. There was no significant difference for affective trust, $F(2, 183) = 1.37, p = .257, \eta^2 = .015$, cognitive trust, $F(2, 183) = 1.12, p = .329, \eta^2 = .012$, rapport, $F(2, 183) = 1.06, p = .348, \eta^2 = .012$, hostility, $F(2, 183) = 2.69, p = .071, \eta^2 = .029$, nor willingness to provide information, $F(2, 183) = 0.06, p = .945, \eta^2 = .001$.

Planned comparisons revealed that both the making of a factual error, $t(64.56) = 3.18, p = .002, d = .659, 95\%CI [.23, 1.08]$, and a judgment error, $t(100.36) = 5.99, p < .001, d = 1.24, 95\%CI [.79, 1.67]$, led to significantly more quantity of information being provided than the situation where no error was made. This was more the case for judgment errors than for factual errors, $t(121.93) = 3.94, p < .001, d = .643, 95\%CI [.31, .97]$. Similar results were found for the quality of information provision after the making of a factual, $t(70.32) = 4.70, p < .001, d$

= .974, 95%CI [.53, 1.41], and judgment error, $t(93.47) = 3.34, p = .001, d = .689$, 95%CI [.27, 1.10], in comparison to control. Again, the quality of information provision did not differ between the different types of errors, $t < 1, ns$, suggesting that the quantity of information provision does not necessarily reflect the quality of the information provided.

Table 3.7 Means and standard deviations for negotiating effectiveness measures as a function of communication error in Study 3.2 ($N = 184$)

Effectiveness Measure	Communication Error					
	Control ($N = 34$)		Factual ($N = 74$)		Judgment ($N = 76$)	
	M	SD	M	SD	M	SD
1. Affective trust	2.39	0.97	2.51	1.00	2.25	0.91
2. Cognitive trust	3.13	0.75	3.19	0.67	3.03	0.61
3. Rapport	3.06	0.54	3.09	0.61	2.96	0.51
4. Hostility	2.88	0.74	2.59	0.66	2.81	0.69
5. Willingness to provide info	2.42	1.06	2.46	1.13	2.50	1.03
6. Quantity of info provision (after error)	0.06	0.07	0.11 ^{a, b}	0.07	0.17 ^{a, b}	0.11
7. Quality of info provision (after error)	0.88	0.64	1.53 ^a	0.71	1.41 ^a	0.98

^a Differs significantly from control, $p < .05$.

^b Differs significantly from the other communication error, $p < .05$.

Response effects

Table 3.8 presents the perceptions of the perpetrator towards the negotiator as a function of response. To test our predictions that a contradict response will be less effective than the situation in where no error was made (H2), we conducted a one-way MANOVA with the type of response as Independent Variable and the seven effectiveness measures as the Dependent Variables. There was a significant multivariate effect of response type, $F(21, 528) = 2.82, p < .001$, with participants reporting significant differences in affective trust, $F(3,183) = 4.24, p = .006, \eta^2 = .066$, rapport, $F(3,183) = 6.68, p < .001, \eta^2 = .100$, and the quality of information provision, $F(3,183) = 7.78, p < .001, \eta^2 = .115$. There was no significant difference for cognitive trust, $F(3,183) = 0.54, p = .654, \eta^2 = .009$, hostility, $F(3,183) = 2.49, p = .062, \eta^2 = .040$, willingness to provide information, $F(3,183) = 0.59, p = .619, \eta^2 = .010$, nor the quantity of information provision, $F(3,183) = 1.88, p = .135, \eta^2 = .030$.

When comparing the response strategies to control, we found no significant differences for affective trust: contradict vs. no error, $t(66.67) = -1.56, p = .123, d = -.358, 95\%CI [-.81, .10]$, apologize vs. no error, $t(69.88) = 1.53, p = .130, d = .333, 95\%CI [-.10, .76]$, and accept vs. no error, $t < 1$. We found that a contradict response after an error led to significantly less rapport, $t(68.73) = -2.70, p = .009, d = -.620, 95\%CI [-1.08, -.16]$. No significant differences were found between an apologize, $t(65.36) = 1.40, p = .167, d = .304, 95\%CI [-.13, .73]$, and accept, $t < 1$, response after an error was made in comparison to the control. Lastly, we found that a contradict $t(61.53) = 4.28, p < .001, d = .982, 95\%CI [.50, 1.46]$, and apologize, $t(85.47) = 2.68, p = .009, d = .583, 95\%CI [.15, 1.02]$, response led to a significantly higher quality of information provision in comparison to control. No significant difference was found when comparing the accept and control conditions, $t < 1$.

Table 3.8 Means and standard deviations for negotiating effectiveness measures as a function of response strategy in Study 3.2 (N = 184)

Effectiveness Measure	Response Strategies							
	Control (N = 34)		Contradict (N = 43)		Apologize (N = 56)		Accept (N = 51)	
	M	SD	M	SD	M	SD	M	SD
1. Affective trust	2.39	0.97	2.06 ^b	0.86	2.71 ^c	0.97	2.27 ^b	0.95
2. Cognitive trust	3.13	0.75	3.00	0.71	3.16	0.59	3.13	0.65
3. Rapport	3.06	0.54	2.74 ^{a,b}	0.50	3.22 ^c	0.49	3.04 ^c	0.60
4. Hostility	2.88	0.74	2.82	0.65	2.53	0.60	2.80	0.77
5. Willingness to provide info	2.42	1.06	2.34	0.99	2.62	1.19	2.44	1.04
6. Quantity of info prov. (after response)	0.06	0.05	0.10	0.07	0.07	0.08	0.07	0.06
7. Quality of info prov. (after response)	0.09	0.38	0.70 ^a	0.83	0.41 ^a	0.76	0.14 ^{b,c}	0.49

^a Differs significantly from control, $p < .05$.

^b Differs significantly from apologize, $p < .05$.

^c Differs significantly from contradict, $p < .05$.

Social needs mediation

To test our hypotheses that social needs mediate the effect of response strategies on the effectiveness measures (H3), we first compared the response strategies to each other (see Table 3.8). We found that using an apologize response led to significantly more affective trust perceptions in comparison to accept, $t(104.40) = 2.37$, $p = .020$, $d = .459$, 95%CI [.07, .84], and contradict, $t(94.91) = 3.55$, $p = .001$, $d = .720$, 95%CI [.31, 1.13]. A similar, but non-significant pattern

was found when comparing accept to contradict, $t(91.53) = 1.14, p = .258, d = .236, 95\%CI [-.17, .64]$. We found significantly more rapport when comparing apologize vs. contradict, $t(89.71) = 4.76, p < .001, d = .965, 95\%CI [.54, 1.38]$, and when comparing accept vs. contradict, $t(92.00) = 2.65, p = .010, d = .549, 95\%CI [.13, .96]$. A similar but non-significant pattern was present when comparing apologize vs. accept, $t(97.44) = 1.70, p = .092, d = .329, 95\%CI [-.05, .71]$. Apologize led to a higher quality of information provision in comparison to accept, $t(95.15) = 2.24, p = .028, d = .434, 95\%CI [.05, .82]$. Interestingly, the quality of information provision was higher for contradict in comparison to accept, $t(65.52) = 3.88, p < .001, d = .803, 95\%CI [.37, 1.23]$, but no significant difference was found when comparing apologize and contradict, $t(85.90) = -1.77, p = .081, d = -.359, 95\%CI [-.76, .04]$.

To test the mediation proposed by H3, we used model 4 of the PROCESS macro from Hayes (2012) with 1000 bootstrapping samples to derive Confidence Intervals. Because our previous analysis showed that response strategies had a direct significant effect on affective trust, rapport and the quality of information provision, we only tested these three mediation models. The three mediation analyses used response strategy as the Independent Variable, belongingness, control, self-esteem and meaningful existence as Mediators in parallel, and affective trust, rapport, and the quality of information provision as Dependent Variables, respectively. Since the response strategy is a categorical variable, we dummy-coded this variable into: contradict vs. control, apologize vs. control, accept vs. control, apologize vs. contradict, accept vs. contradict, and accept vs. apologize.

Our analyses of social needs and affective trust revealed two mediation effects. First, a significant indirect effect of response on affective trust, via meaningful existence, when comparing accept with apologize, $b = -.09, SE = .06, 95\%CI [-.23, -.01]$. When modeling this effect, the original direct effect of response strategy on affective trust, $b = -.44, SE = .18, t(180) = -2.42, p = .016, 95\%CI [-.80, -.08]$, became non-significant, $b = -.24, SE = .15, t(176) = -1.60, p = .112$, suggesting that meaningful existence mediated the difference between strategies. Second, significant indirect effects of response on affective trust, via belongingness, $b =$

.22, $SE = .08$, 95%CI [.09, .38], and via meaningful existence, $b = .09$, $SE = .06$, 95%CI [.00, .25], when comparing apologize with contradict. When modeling this effect, the original direct effect, $b = .65$, $SE = .19$, $t(180) = 3.43$, $p = .001$, 95%CI [.28, 1.03], was reduced but not eliminated, $b = .37$, $SE = .16$, $t(176) = 2.23$, $p = .027$, suggesting that belongingness and meaningful existence mediated the difference between strategies. No other significant indirect effects were found.

Our analyses of social needs and rapport revealed no mediation effects for the accept strategy, but a significant indirect effect via belongingness, $b = .10$, $SE = .04$, 95%CI [.03, .19], when comparing apologize with contradict. When modeling this effect, the direct effect of strategy on rapport, $b = .48$, $SE = .11$, $t(180) = 4.45$, $p < .001$, 95%CI [.27, .69], was reduced but not eliminated, $b = .30$, $SE = .09$, $t(176) = 3.25$, $p = .001$, suggesting belongingness mediated the difference observed across strategy. No other significant indirect effects were found.

Our analyses of social needs and the quality of information provision found no significant indirect effects across any of the response strategies. The total and direct effects of all three mediation models can be found in Appendix 3A.

Additional explorative analysis

To explore any interaction effects between the communication error and response strategies, we conducted a two-way MANOVA with type of communication error and response strategies as the Independent Variables and the seven effectiveness measures as the Dependent Variables. There was no significant multivariate interaction effect, $F(14, 278) = 1.05$, $p = .404$.

Discussion

This research is the first to consider communication error management in law enforcement interactions by focusing on both the impact of different types of errors and responses to the error once it has occurred. Our studies seem to suggest that the direct negative effects of errors are dependent on the type of

interaction. In a suspect interview, the making of errors, particularly judgment errors, appears to undermine the relationship by decreasing affective trust and rapport, irrespective of the response strategy used (Study 3.1). In contrast, in a crisis negotiation, it is not the error *per se*, but the response that is used afterwards that determines the effect of errors on the relationship (Study 3.2). In both studies, we found that using accept re-establishes rapport, while contradict decreases rapport. The effectiveness of the use of accept in terms of willingness to provide information was only found in the suspect interview setting (Study 3.1), while the effectiveness of the use of apologize in terms of affective trust and rapport was only found in the expressive crisis negotiation setting (Study 3.2).

The finding that both apologize and accept response strategies are effective suggests that accepting responsibility is important to the efficacy of error recovery (Fukono & Ohbuchi, 1998). This is consistent with the general position, as argued by experienced interrogators, that treating the suspect in a humane manner is most effective in establishing rapport (Russano et al., 2014). However, the more interesting finding is the differing result for the effectiveness of the response strategy per type of interaction, which may be explained by the different needs of the suspect. In a police interview, a suspect wants to provide information that is 'correct', and an accept response facilitates this need. This result corroborates Alison et al.'s (2013) finding that interviewers who allowed suspects to correct what they had said reduced the subsequent resistance from the suspect. By contrast, in a crisis negotiation, the perpetrator may want to call attention to him or herself (Hammer & Rogan, 1997). Thus, as our mediation findings in relation to meaningful existence support, the effectiveness of apologize in crisis negotiation is that it addresses the perpetrators' personal need. If a negotiator shows that he/she determines the person as meaningful, their need for attention is addressed. To further unravel whether it is this instrumental and expressive focus of these types of interactions that explains these results, future research should manipulate these foci in the same context in one study. For example, in the interview setting a good starting point would be to differentiate in the type of crime of which the person is suspected of (theft of

money vs. violence to a family member), while in the crisis negotiation setting, a good starting point would be to differentiate between a suicide and kidnapping situation.

We also found a set of counterintuitive relationships. First, our findings consistently show that the making of errors has a positive effect on the quantity of information provision and that the use of a contradict response positively influences the quality of information provision in crisis negotiations. Why might this happen? One possibility may be that the suspect perceives the judgment error and contradict response as an ego threat that must be corrected, in this case by providing more (deceitful) information or circumventing. This explanation is consistent with Ren and Gray (2009), who argue that once someone feels a threat to their integrity they call attention to the offense as it symbolically shows that someone deserves respect. Although it may not be wise to advise law enforcement personnel to often make mistakes or deny them, it may prove to be a useful approach in a situation where the other party is not willing to talk at all (cf. Taylor & Donald, 2007).

Second, we found that the quality of information provision was higher after the use of an apologize response in the crisis negotiation setting in comparison to the situation in where no error was made. A possible explanation for this effect may be a phenomenon known within the service recovery literature as the 'recovery paradox' (Michel, 2001). This paradox shows that it is possible to have a higher overall satisfaction of a customer after a service problem in comparison to the situation in which no problem occurred. This paradoxical effect is present only when the customer perceives a more than appropriate response after a service problem has occurred. For example, in the crisis negotiation data, while not significant, similar patterns were evident across all effectiveness measures for apologize responses in comparison to the no error situation. This again underlines the positive aspect of erring when using an appropriate response.

There are four areas that should be prioritized in following up our initial explorations of communication error management. The first relates to the online nature of the experiment. We decided to assess online interactions so

that subtle differences such as the tone and nonverbal cues or the gender of the interviewer could not confound our results. Moreover, the rapid development of new technologies increases the chance of law enforcement interactions being online (McGin & Croson, 2004). However, research suggests that social behaviors such as cooperation, truth-telling and rapport building are more likely to occur in face-to-face interaction in comparison to online interactions (McGin & Croson, 2004). This implies that ours is a conservative test of what might occur in face-to-face interactions, but such an inference might be neglecting other dynamics that mediate this effect. Thus, future research should consider whether the interaction medium modifies the effects of errors and response messages.

The second relates to the fact that the participants had to imagine that they had committed the exam fraud and committed a theft, which may raise questions about whether or not our outcomes are generalizable to real suspect interviews and crisis negotiations. It could be argued that the participants did not feel genuinely guilty, as they had not committed any crime. Although we understand this concern and recognize that other experimental paradigms better address this point (e.g., Russano et al., 2005), we have reasons to believe that our participants engaged with the experiment fully. For example, they addressed the signs of being nervous in their responses, and asked in their feedback forms whether or not the conversation would have any real consequences. Nonetheless, future research on communication errors and response strategies in real suspect interviews is needed to strengthen the ecological validity of this study.

The third relates to the response tactics that we examined in this study. They need deconstruction if we are to understand fully how and when such communication devices will work. For example, Kirchoff, Wagner, and Strack (2012) have shown that an apology consists of different components, while we only considered it in the most basic form. Similarly, we used quite an extreme form of a contradiction, whereas a subtler denial might have resulted in different responses (Dutta & Pullig, 2011). Both of these examples are further compounded by the fact that we only used one strategy in each condition. Some research in service recoveries shows that a combination of strategies may be

most effective in terms of satisfaction with the response (Hocutt, Bowers, & Donovan, 2006). Using these basic forms was necessary to make a first inquiry into the field and to ensure that we could compare our findings to studies of errors in other settings. However, future work will need to examine these subtleties.

Finally, we only considered people living in the Netherlands, but Patterson, Cowley, and Prasongsukarn (2006) have shown that the cultural value orientation of a person influences how a response is perceived. For example, people scoring high on collectivism perceive a higher fairness of how they are treated when the response is initiated by the offending organization, while such an effect is not found by people scoring high on individualism. Consequently, it would be fruitful to test whether and how the current findings alternate when a law enforcement officer encounters a suspect from another cultural background. Not least, because the cultural diversity of the encountered suspects has increased dramatically over the past few years (Giebels & Taylor, 2009; Taylor & Donohue, 2006).

This is the first study that examines communication error management in law enforcement interactions from a receiver's perspective and focuses more on the individual by making sense of their needs. We believe our work is important from an academic perspective in that it opens venues for future error response research by using a method that can measure actual behavior instead of intentions and by establishing the mediating role of intrapersonal social needs. It also supports the already existing notion among law enforcement personnel that errors can provide a form of (negative) feedback. Yet, this notion needs refinement in that the response of the law enforcement officer towards the error made should not be underestimated, as this ultimately determines how an error is received.

Appendix 3A

Table 3A.1 *Total and direct effects of mediation analysis with response strategy as Independent Variable, belongingness, control, self-esteem and meaningful existence as Mediators in parallel, and affective trust as Dependent Variable in Study 3.2*

Comparison	Total effect	SE	t	p	LCI	UCI	Direct effect	SE	t	p	LCI	UCI
Accept vs. apologize	-.44	.18	-2.42	.016	-.80	-.08	-.24	.15	-1.60	.112	-.55	.06
Apologize vs. contradict	.65	.19	3.43	.001	.28	1.03	.37	.16	2.23	.027	.04	.69

Table 3A.2 *Total and direct effects of mediation analysis with response strategy as Independent Variable, belongingness, control, self-esteem and meaningful existence as Mediators in parallel, and rapport as Dependent Variable in Study 3.2*

Comparison	Total effect	SE	t	p	LCI	UCI	Direct effect	SE	t	p	LCI	UCI
Contradict vs. control	-.32	.12	-2.64	.009	-.56	-.08	-.29	.10	-2.88	.005	-.49	-.09
Apologize vs. contradict	.48	.11	4.45	.000	.27	.69	.30	.09	3.25	.001	.12	.48
Accept vs. contradict	.30	.11	2.72	.007	.08	.52	.26	.09	2.84	.005	.08	.44

Table 3A.3 *Total and direct effects of mediation analysis with response strategy as Independent Variable, belongingness, control, self-esteem and meaningful existence as Mediators in parallel, and quality of information provision as Dependent Variable in Study 3.2*

Comparison	Total effect	SE	t	p	LCI	UCI	Direct effect	SE	t	p	LCI	UCI
Contradict vs. control	.61	.15	4.05	.000	.31	.91	.62	.15	4.05	.000	.32	.92
Apologize vs. control	.32	.14	2.26	.025	.04	.60	.32	.15	2.20	.029	.03	.61
Accept vs. contradict	-.56	.15	-3.84	.000	-.85	-.27	-.59	.14	-3.93	.000	-.88	.29
Accept vs. apologize	-.27	.13	-2.16	.033	-.52	-.02	-.29	.13	-2.18	.030	-.55	-.03

Chapter 4

Communication error management in law enforcement interactions: A sender's perspective

This chapter is based on:

Oostinga, M. S. D., Giebels, E., & Taylor, P. J. (under review).

Communication error management in law enforcement interactions: A sender's perspective.



The authors would like to thank Peter, Willem, Michiel, Frans, Jessica, Christina, Iskander, Briska Smit, Frans Bominar, Eltjo Herder, and Roselle Jansen for their help in the data collection.

Communication error management in law enforcement interactions: A sender's perspective

Errors can have important consequences, particularly for those working in safety-critical environments (Niven & Ciborowska, 2015) such as crisis (hostage) negotiations and suspect interviews. However, to date, most research in these fields focuses on positive communicative behaviors and their role in fostering rapport (Alison et al., 2013; Donohue & Roberto, 1993) and cooperation (Giebels & Taylor, 2009; Richardson, Taylor, Snook, Conchie, & Bennell, 2014). Far less research has considered negative behaviors and, in particular, what happens when a law enforcement officer (unwittingly) makes a mistake. Yet, research in the health care and aviation domain shows that communication errors happen often and can have severe consequences, including the loss of life (Dalto, Weir, & Thomas, 2013; Lingard et al., 2004). It also suggests that better understanding in the psychological effects of errors and individuals' efforts to recover can help identify ways of reaching better outcomes. Thus, if we better understand law enforcement officers' internal state after recognizing their error, then we can develop evidence-based training and prepare them for when this situation occurs.

In this study, we investigate the effect of factual errors (the use of a wrong name or date) and judgment errors (misrepresentation of feelings of a receiver) on the interactions that occur as part of crisis negotiations (Study 4.1) and suspect interviews (Study 4.2). Specifically, we focus on an expressive crisis negotiation (i.e., suicide) and an instrumental oriented suspect interview (i.e., money theft). Arguably, both types of interactions are characterized by time pressure, high pressure to perform, and a large amount of unverified information, making erring inevitable. However, while the crisis negotiation under scrutiny is expressive in nature with the officer seeking information to provide care and help, the suspect interview of focus here is more goal oriented and aimed at gathering information to detect crime (Beune et al., 2010; Hammer & Rogan, 1997; Vecchi

et al., 2005). The question is to what extent these different foci may impact the error sender's psychological and behavioral reactions.

Following Oostinga et al. (2018-a), we define communication error management as a four-stage process: (1) the law enforcement officer utters a message; (2) the suspect judges the message to contain an error; (3) the suspect (in)directly addresses the error; and, (4) the law enforcement officer realizes the error and responds. To investigate this process and the effects on the error sender, we developed and implemented a prototypical communication training exercise in which we let law enforcement officers unwittingly make a mistake and examined their cognition, affect and behavior. At the cognitive level, we explore the extent to which law enforcement officers perceive stress or distraction after the making of a communication error, since research shows that an error may influence the error sender's focus (Dimitrova, van Dyck, van Hooft, & Groenewegen, 2014). At an affective level, we examine the extent to which law enforcement officers felt negative affect (i.e., self-oriented anger, shame and guilt) after making a communication error, since research suggests that making an error may particularly trigger negative emotions (Rybowiak et al., 1999). At a behavioral level, and following research suggesting that cognitive and affective states may interfere with the error sender's communicative flexibility (Benoit, 2013; Keith & Frese, 2005), we analyze the type of responses law enforcement officers use following the error, and how cognitive and affective states may mediate these responses.

Error management and organizations

Human errors within organizations have received much attention within academia. Broadly, previous studies fall into one of three categories. The first category of research examines the type of errors that occur in different situations, ranging from relatively low-stakes situations (e.g., immersion classrooms, Lyster, 1998; and working with computers, Brodbeck, Zapf, Prümper, & Frese, 1993) to high-stakes situations (e.g., operation rooms, Lingard et al., 2004; aviation, Dalto et al., 2013; and railway track maintenance, Gibson et al., 2006). The second area of research focuses on the (institutional) context in which errors

are made and how this affects the outcomes of these made errors. For example, this is studied from an organizational perspective, by Van Dyck et al. (2005) who showed that if management determines errors as meaningful this error culture is positively related to firm performance. Similarly, Bell and Kozlowski (2008) found that positive error framing has a beneficial effect on adaptive expertise. The third category of research considers the effect of errors on the error receiver (Coombs, 1999; Eubanks & Mumford, 2010; Thoroughgood et al., 2013; Zheng, Van Dijke, Leunissen, Giurge, & De Cremer, 2016). For example, Coombs (1999) found that organizations who showed compassion after a crisis improved on their organizational reputation. Similarly, research on interpersonal relationships by Zheng et al. (2016) demonstrates that after a transgression showing remorse can be an effective response to obtain forgiveness. Although these three categories of research each provide a deeper understanding of error making and management, the studies assess the different stages of error management in isolation. We, however, propose an integration of these, because error management should be seen as an interplay between the error sender and the error receiver (Clark & Brennan, 1991), and errors cannot be seen in exclusion from the context in which it occurs (Zhao, 2011). Thus, in our study we will test the effect of errors on a law enforcement officer (error sender) and how this affects their response within an interaction with a suspect (error receiver) over time.

Errors in law enforcement interactions

In interviews with experienced crisis negotiators, Oostinga et al. (2018-a) found that errors may usefully be distinguished into three forms: factual, judgment and contextual error. A factual error occurs when negotiators convey the wrong information, such as using the wrong name of the perpetrator. A judgment error occurs when the social or ethical issues surrounding the message are not appropriate, such as when the negotiator is overly friendly or makes an inappropriate joke. A contextual error occurs when something goes wrong in the police practices, such as when equipment malfunctions and inhibits communication. The first two types of errors focus primarily on the negotiation's

actors rather than the procedure, and so they have been the focus of most research (and are our focus here).

According to studies of organizational error making, one significant consequence of errors is that they may lead to distraction and negative emotions (Brodbeck et al., 1993; Rybowski et al., 1999). Brodbeck et al. (1993) showed that the amount of time spent on errors is positively related to emotional strain. Interestingly, no research makes a distinction in factual or judgment errors and whether these affect an error sender differently. Yet, there is good reason to anticipate that there will be differences. For example, recent evidence shows that errors in suspect interviews have a detrimental effect on both the trust perceptions (i.e., a cognitive effect) and rapport (i.e., an affective effect) experienced by the suspect (Oostinga, et al., 2018-b). When considering these findings from a law enforcement officer's perspective, the making of communication errors may have a negative influence on the officer, as it jeopardizes their goal of building a trusting relationship with the suspect to provide care and help. Furthermore, Oostinga et al. (2018-b) found that judgment errors have a more negative effect on suspect's cognitive and affective experience when compared to factual errors. This may be the result of a judgment error being seen as an ego threat by the suspect, as they perceive that they are not taken seriously (Ren & Gray, 2009). We therefore predict that, from a law enforcement officer's perspective, judgment errors will be perceived as being more problematic than factual errors, as they put more at stake:

H1a: The making of a judgment or factual error leads a law enforcement officer to experience more stress, distraction, and negative affect, compared to the making of no error.

H1b: The making of a judgment error will lead to stronger effects on stress, distraction, and negative affect, than the making of a factual error.

Response strategies in law enforcement interactions

People differ in their responses to errors, from complete denial to full acceptance of responsibility (Benoit, 2013). Recently, Oostinga et al. (2018-b)

assessed the effectiveness of responses in terms of how they influenced the cognition (affective trust), affect (rapport and hostility) and behavior (willingness to provide information) of recipients. Specifically, Oostinga et al. compared three strategies self-identified by negotiators: contradict (denying responsibility), apologize (taking responsibility), and accept (taking responsibility and assuring prevention). They found that contradict decreases rapport and hostility from the perspective of the receiver, while accept reconciles it to the level of no error made. Apologize seems more effective for affective trust and rapport in crisis negotiation, while accept seems more effective for the willingness to provide information in a suspect interview.

When considering these response strategies alongside research from other domains, the ultimate goal of the response should be to reconcile the relationship with the other party and respond to what is said in error (Benoit, 2013). To accomplish this, the law enforcement officer should address what did not align with the suspect. Yet, when someone is distracted there is no cognitive capacity to recognize the consequences of the behavior for others and this may influence their capacity to respond in this way (Weiner, 1985). The focus may very much be on the self and who is responsible, what may result in a response that aligns much more with the sender's focus and feelings and may result in an evasion of responsibility. Moreover, in their study of self-regulation in error management training, Keith and Frese (2005) showed that the cognitive-attentional focus and emotion control leads to more flexibility to solve new problems. Thus, law enforcement officers should then be more flexible in responding to the communication error they have made and provide a solution to the problem. Consequently, we hypothesize that:

H2a: A decrease in the law enforcement officer's experienced stress, distraction, and negative affect leads to the use of an apologize or accept over a contradict response.

H2b: An increase in the law enforcement officer's experienced stress, distraction, and negative affect leads to the use of a contradict over an apologize or accept response.

Current study

Study 4.1 was a first test to assess the effect of errors on a law enforcement officer's cognition and affect and whether and how this influences their error response in an interaction with an expressive focus. Because we were primarily interested in the effect of errors on the law enforcement officer's psychological and behavioral responses, we decided to take an experimental approach with professional crisis negotiators and mock-suspects. This enabled us to focus on the relationship between the psychological impact and behavioral responses of the law enforcement officer, while controlling for external influences. Negotiators were asked to prepare a negotiation and their preparation material led them to make one of two errors during a negotiation over the telephone: factual (preparation material included the wrong name) or judgment (actor was instructed that he did not want to be addressed by the first name), and we compared this with a control condition in which no error was made.

Study 4.1

Method

Participants

Participants were 64 (42.1%) crisis negotiators from correctional institutions (e.g., State prisons), 38 (25.0%) police officers in training to become crisis negotiators, and 50 (32.9%) police officers taking a crisis communication course. Because our definition of communication error management requires the error sender (the negotiator) to (in)correctly use the name of the suspect, 18 negotiators (1 control, 6 factual, and 11 judgment) who did not use the name were excluded from further analysis. One other negotiator was excluded because he had failed to fill out the post-experiment questionnaire. Of the remaining 133 negotiators, 106 were male (79.9%), their mean age was 39.9 years ($SD = 8.5$), and they had worked as a crisis negotiator in a correctional institution or with the police for 11.8 years on average ($SD = 7.7$, Range: 1 month - 36 years).

Measures

The original design also included a pre-negotiation questionnaire that included nine items to determine the negotiator's error orientation based on scales from Rybowski et al. (1999): error management and error prevention. However, analysis showed high scores on error management and low scores on error prevention, and no significant effects. A possible explanation for not finding these effects may be that the ultimate goal of the negotiator's course was to demonstrate the job skills that they had mastered. Therefore, reporting that you are good in managing errors could have been a tactical decision of the negotiators. Consequently, we decided to remove these factors from further analysis.

Negotiator's cognition and affect. A post-experiment questionnaire required negotiators to self-report several different aspects of their experience. They were first asked for open responses to three questions: 'How did you experience the conversation?', 'What did you perceive to be positive?', and 'What did you perceive to be negative?' They were then asked to respond on a scale from 1 (Not at all) to 5 (Very much) to five items, each measuring a different construct: 'To what extent did you feel tension after using the wrong name?' (stress); 'To what extent did you get distracted from the job after using the wrong name?' (distraction); 'To what extent were you angry at yourself after using the wrong name?' (self-oriented anger); 'To what extent did you feel shame after using the wrong name?' (shame), and 'To what extent did you feel guilt after using the wrong name?' (guilt). We counter-balanced the order of asking to what extent they felt guilty and shameful, to overcome any order effects (Niedenthal, Tagney, & Gavanski, 1994). We used single item measures because of time constraints, recognizing that many constructs can be adequately captured with one item (Fuchs & Diamantopoulos, 2009).

Of the five items, three (anger, shame and guilt) ostensibly measured different aspects of negative affect. Pairwise correlations among these items were high (Range $r(131) = .55 - .68, p < .001$), and a Principle Components factor analysis on the three items revealing one underlying factor (based on Eigenvalues greater

than 1) that explained 74.32% of the variance. Consequently, we decided to create a negative affect scale by averaging the scores on these three items, which showed high internal consistency (Cronbach's $\alpha = .83$). A higher score on this scale means that the negotiator experienced more negative affect.

Procedure

Negotiators undertook a prototypical role-play exercise often used during training sessions (Van Hasselt, Romano, & Vecchi, 2008), using a scenario adapted from Giebels et al. (2017). The police negotiators' task, which was to negotiate via telephone with a perpetrator, was described as follows (information for prison negotiators between brackets):

Jaap Verhoeven barricaded himself in a room at the police academy (visiting area of the prison) with a knife. Jaap has threatened to commit suicide. Jaap only wants to talk to a negotiator. So far, no further information is known. The second negotiator is on his/her way but is delayed. You will have to start on your own. Goal: make contact, stabilize the situation, build a relationship, and – if possible – gain information and provide solutions to end this situation.

The instruction about a second negotiator was necessary because negotiations are often carried out in pairs (Noesner, 1999). We decided to let the negotiators perform alone in this instance to enable an analysis of their error response without interference from a second negotiator.

Having read the information, the negotiator was asked to contact the perpetrator over the phone. The perpetrator was situated in another room, was instructed to behave as naturally as possible, and give standardized reactions. The people who played the role of perpetrator were highly experienced actors who are trained to play these types of roles. The negotiation was ended after five minutes.

After the negotiation, the negotiator was told that the role-play was over and that we were interested in their reflective observations about the negotiation. They then completed the post-experiment questionnaire and were debriefed.

Error manipulation. Each negotiator was assigned to one of the three error conditions: factual, judgment or control. In the factual error condition, the perpetrator was addressed as Jaap, while in fact his name was André. Once the negotiator used the name Jaap, the perpetrator was instructed to respond with the sentence: 'No, you do not speak with Jaap!' In the judgment error condition, we instructed the perpetrator that he did not want to be approached by his first name, but by his surname Mr. Verhoeven. Once the negotiator used the name Jaap, he was instructed to respond with the sentence: 'How dare you call me Jaap!' In the control condition, we gave the negotiator the right name, and instructed the actor if they used the name to respond with the sentence: 'Yes, my name is Jaap!' As such, the negotiators made the mistake themselves and were not instructed to do so.

We decided to use the perpetrator's name for our error manipulation for three reasons. First, negotiators are trained to use the name to contact a perpetrator. Thus, it was highly likely that the negotiators would use the name at some point. Second, it was possible to encourage negotiators to use the name by frequently using the name in the scenario instructions. Third, evidence from several domains highlights the importance of name to identity and behavior (Seeman, 1980), suggesting misnaming can be consequential.

Response coding

The first author and an independent coder read verbatim transcripts of each negotiation. They independently identified four different forms of error response: apologize, exploration, deflect, and no alignment. In an initial coding, one coder had classified six types, but they could be re-classified in the four overarching types when it was decided to only focus on the literal response and not on interpreting the meaning of the message. Apologize was an addressing response in which the negotiator took responsibility (e.g., 'I want to apologize for that'). Exploration was an inquiring response in the form of a question or remark (e.g., 'What is your name then?'). Deflect was an attributing response in the form of a question or remark (e.g., 'Oh, they must have misinformed me'). No alignment was an unrelated response in which the negotiator said something

completely off-topic (e.g., 'I am a crisis negotiator'). Note that our codes bear similarity to those used by Oostinga et al. (2018-a; in 2018-b). The first author and a second independent coder who was instructed on the classification coded all the messages. A response was assigned to the category that was most prevalent in the response. This resulted in excellent inter-rater agreement (Cohen's $\kappa = .81$). The few disagreements were resolved through discussion. Out of the 99 responses, 23 included a combination of responses. Specifically, the one's that used an apology combined this with deflect ($n = 5$), exploration ($n = 7$), no alignment ($n = 7$), and a combination of deflect and no alignment ($n = 1$). We also found a couple of exploration and no alignment combinations ($n = 3$).

Results

Preliminary analysis

Table 4.1 presents the Means, SDs, and zero-order correlations among the study variables. As expected, Table 4.1 shows high correlations between the cognition measures of stress and distraction, and negative affect.

Table 4.1 Means, standard deviations, and inter-correlations among study variables in Study 4.1 ($N = 133$)

Variables	M	SD	1	2	3	4	5
1. Gender ^a	1.20	0.40					
2. Age	39.92	8.47	-.21*				
3. Experience ^b	11.78	7.72	.01	.42*			
4. Stress	2.35	0.99	-.01	-.12	.03		
5. Distraction	1.89	0.92	.06	-.10	-.09	.36*	
6. Negative affect	1.69	0.79	.03	-.01	.06	.63*	.26*

^a 1 = Male, 2 = Female, ^b $n = 131$, * $p < .05$.

Hypothesis testing

Error effects. Table 4.2 presents the negotiator's cognition and affect as a function of communication error. To test our predictions that the making of a judgment or factual error by a negotiator leads to more stress, distraction, and negative affect compared to the making of no errors (H1a) and this effect will be stronger for a judgment error than a factual error (H1b), we conducted a one-way MANOVA with communication errors as the Independent Variable and the three cognition and affect measures as the Dependent Variables. There was a significant multivariate effect of error type, $F(6, 258) = 5.66, p < .001$, with negotiators reporting significant differences in stress, $F(2, 132) = 7.30, p = .001, \eta^2 = .101$, distraction, $F(2, 132) = 5.31, p = .006, \eta^2 = .075$, and negative affect, $F(2, 132) = 13.64, p < .001, \eta^2 = .173$.

In comparison to the control condition, the making of a factual error led to more stress, $t(79.74)^6 = 3.36, p = .001, d = .741, 95\%CI [.29, 1.19]^7$, distraction, $t(66.80) = 2.95, p = .004, d = .651, 95\%CI [.20, 1.09]$, and negative affect, $t(83.82) = 5.66, p < .001, d = 1.25, 95\%CI [.77, 1.72]$. A set of equivalent effects with lesser magnitude were found when comparing a judgment error to control, as it led to more stress, $t(75.23) = 3.82, p < .001, d = .738, 95\%CI [.28, 1.19]$, and negative affect, $t(74.88) = 5.10, p < .001, d = 1.15, 95\%CI [.67, 1.62]$. There was, however, no difference in the amount to which the negotiator got distracted, $t < 0.98$. Interestingly, the making of a factual error did lead to more distraction in comparison to a judgment error, $t(96.85) = 2.34, p = .021, d = .471, 95\%CI [.07, .87]$. There were no significant differences in stress and negative affect, both t 's < 0.39 .

⁶ Since the sample sizes varied per condition, we have decided to take the Welch's t-test instead of the Students t-test throughout this chapter (Delacre et al., 2017).

⁷ To calculate the effect size and their associated Confidence Intervals from the Welch's t-test, we have used the SPSS file of Wuensch (2012) throughout this chapter.

Table 4.2 Means and standard deviations for negotiator's cognition and affect as a function of communication error in Study 4.1 ($N = 133$)

	Communication errors					
	Control ($n = 34$)		Factual ($n = 52$)		Judgment ($n = 47$)	
Negotiator's cognition and affect	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Stress	1.82	0.83	2.50 ^a	1.02	2.57 ^a	0.93
Distraction	1.59	0.96	2.19 ^{a,b}	0.89	1.79 ^b	0.83
Negative affect	1.13	0.49	1.86 ^a	0.71	1.90 ^a	0.87

^a Differs significantly from control, $p < .05$.

^b Differs significantly from the other communication error, $p < .05$.

Enacted response strategies. Negotiators used the response strategy exploration the most frequent ($n = 42$), followed by apologize ($n = 28$), no alignment ($n = 16$), and deflect ($n = 13$). To test our predictions regarding the effects of negotiator's stress, distraction, and negative affect on response type (H2a and H2b), we computed binary logistic regressions in which stress, distraction, and negative affect were predictors for each of the four response strategies (coded as binary Dependent Variables, 0 = not used, 1 = used). Table 4.3 presents the results of these regressions. As can be seen from Table 4.3, the full models for predicting apologize, exploration, and deflect were all significant, but the model for predicting no alignment was not. Consistent with H2a, both stress, Wald $\chi^2 = 4.11$, $p = .043$, and distraction, Wald $\chi^2 = 5.50$, $p = .019$, were significant predictors of negotiators' apologizing, with negotiators more likely to use an apologize response when they experienced more stress and less distraction. Similarly, stress was a predictor of exploration, Wald $\chi^2 = 4.96$, $p = .026$, with negotiators using an exploration response more often when they experienced less stress. In partial support of H2b, negative affect was a significant negative predictor of deflect, Wald $\chi^2 = 6.68$, $p = .010$, with negotiators using more deflect responses when they experienced less negative affect.

Additional analysis

Although we did not have any predictions as to whether certain responses were used more often after a specific type of error, it is interesting to explore whether such a relationship is present. Consequently, we performed a chi-square test and a significant relationship could be found between error type (factual vs. judgment) and first response, $\chi^2(3, n = 99) = 10.36, p = .016$. Negotiators were most likely to use exploration after a factual error (50% within error condition), while they were most likely to use exploration or apologize responses after a judgment error (respectively 34.0% and 38.3% within error condition). Interestingly, they seemed more likely to use no alignment after a factual error compared to a judgment error (23.1% vs. 8.5% within error condition), while the opposite was true for deflect responses (7.7% vs. 19.1% within error condition).

Table 4.3 Regression, standard deviations, and odds ratios of coefficients for the enacted response strategy as a function of negotiator's cognition and affect in Study 4.1 ($n = 99$)

Negotiator's cognition and affect	Response strategies											
	Apologize ^a ($n = 28$)			Exploration ^b ($n = 42$)			Deflect ^c ($n = 13$)			No alignment ^d ($n = 16$)		
	<i>B</i>	<i>SEB</i>	Exp <i>b</i>	<i>B</i>	<i>SEB</i>	Exp <i>b</i>	<i>B</i>	<i>SEB</i>	Exp <i>b</i>	<i>B</i>	<i>SEB</i>	Exp <i>b</i>
Constant	-1.07	0.77		0.07	0.66		-0.27	1.10		-3.13*	0.97	
Stress	0.66*	0.33	1.94	-0.71*	0.32	0.49	0.44	0.43	1.56	-0.08	0.41	0.93
Distraction	-0.79*	0.34	0.46	0.11	0.27	1.11	0.19	0.39	1.21	0.65	0.34	1.91
Negative affect	-0.03	0.37	0.97	0.63	0.35	1.87	-1.92*	0.74	0.15	0.14	0.43	1.15

* $p < .05$. ^a $\chi^2(3, n = 99) = 8.28, p = .041, R^2 = 0.115$, ^b $\chi^2(3, n = 99) = 5.98, p = .113, R^2 = 0.079$, ^c $\chi^2(3, n = 99) = 10.36, p = .016, R^2 = 0.184$, ^d $\chi^2(3, n = 99) = 4.64, p = .201, R^2 = 0.078$ (Nagelkerke).

Discussion

As predicted, our analyses demonstrate that the making of a communication error leads to more stress and negative affect, and that this influenced the kind of response strategy used by a negotiator. Specifically, more stress and less distraction were associated with an apologize response, while less stress was associated with an exploration response. This separation of responses corroborates the notion that more primitive forms of coping tend to occur when greater threat is perceived, while more problem-focused forms of coping arise when the perceived threat is lower (Lazarus & Folkman, 1984).

What we did not assess in this study, however, is the effect of the other's party response on the enacted response strategy. We would expect that negative responses to the negotiator would strengthen the effects we observed. Moreover, we asked the negotiators to self-report on how the error affected their cognition and affect, but we did this after their behavior. We tried to overcome this shortcoming by asking how they felt directly after the error, but it remains unclear what came first. Namely, were they experiencing stress, distraction, and negative affect and therefore more likely to respond in the manner they did. Or, did they respond and then experienced the levels of stress, distraction and negative affect that they reported. This latter theory may also explain our unexpected finding that when they experienced less negative affect this led to the use of a deflect response. That is, when they deflect their responsibility they may not feel like being the instigator of the error incident, which in turn may decrease their experienced negative emotions towards the self (Brown, Williams, & Lees-Haley, 1994). It will be useful to invest effort in identifying a methodology that allows the causality to be disentangled, but, as with other areas of cognitive and affect research (Ajzen & Fishbein, 1977; Bagozzi, 1982), doing so is likely to prove a challenge.

One unexpected finding in our data was that factual errors were reported as more distracting than judgment errors. A possible explanation for this finding is that our negotiators are perceiving errors about names as more consequential than errors about beliefs, perhaps due to the association between a person's

name and identity. Our extra analysis provides some insight into this effect, since after a factual error, negotiators were more likely to use an explorative response. This suggests that negotiators put their specialized negotiator role aside and started to adopt a more evidence-gathering (i.e., interviewer) mode of interaction. By switching from a relational to evidence-orientated communicative frame (Taylor, 2002a; Taylor & Donald, 2007), the error sender may try to understand what went wrong and provide viable solutions for why the error occurred in the first place. They also likely reduce the chance that the other party feels personally attacked (Giebels & Taylor, 2009). Those who did not engage in information gathering adopted a no alignment response – this response occurred more after a factual error compared to a judgment error – which shows the direct consequence of distraction.

The explanation offers up an interesting hypothesis about how the law enforcement officer's role influences their error reactance. That is, if they focus on information gathering to providing care and help they may take a more relational approach, while if they focus on information gathering to detect crime they may adhere to a more evidence-gathering format. It is interesting to see whether the dispersion of the enacted response strategies is similar in an interaction that is focused solely on information gathering to detect crime. In the light of the previous findings, one would expect that in this context the use of an exploration response may be more prevalent.

Study 4.2

Considering the possible contextual dynamics identified above, the goal of Study 4.2 was to replicate the findings of Study 4.1 and build upon it in four ways. First, we assessed an interaction in which the law enforcement officer has a different focus, as within a suspect interview the focus is not so much on providing care and help but focuses on gathering (accurate) information to detect crime. Second, we were interested in whether the error senders could imagine

what the effect of their errors was on the other side. By doing this, we may provide a better insight into the psychological and behavioral effects of the errors on themselves. Following the results from the study of Oostinga et al. (2018-b), we expected that they perceive the consequences of the judgment errors to be more detrimental than the factual errors, as they were also perceived as more problematic by the receiver. This leads to the following hypothesis:

H3a: The making of a judgment or factual error leads a law enforcement officer to perceive lower affective and cognitive trust perceptions, and rapport of the suspect, compared to the making of no error.

H3b: The making of a judgment error will lead to a stronger effect than the making of a factual error.

Third, suspects will vary in the extent to which they are cooperative and accept a response or not, because they each have different interests that are at stake. Therefore, we decided to manipulate the stance of the suspect as either cooperative or non-cooperative after receiving a response. As discussed in Study 4.1, the goal of the police is to build a trusting relationship with the suspect to make them cooperate. In a suspect interview, the law enforcement officer wants to make the suspect talk and provide information. We expect that when a suspect is non-cooperative after he/she has received an error with response strategy of the law enforcement officer, the negative effect of their error is more pronounced. Consequently, we hypothesize that:

H4: The impact of an error on the law enforcement officer's experienced stress, distraction, and negative affect will be moderated by the stance of the suspect. That is, the effect of an error will be stronger in the situation which the suspect is non-cooperative in comparison to the situation which the suspect is cooperative.

Fourth, following the critique of Study 4.1, we added an unobtrusive observation of the error sender's direct error reaction by measuring their electrodermal activity (EDA) during the interaction. Changes in EDA have been shown to correlate with changes in the activity of the sympathetic nervous system (SNS; Critchley, 2002), which is responsible for a person's fight or flight response. Consequently,

EDA is used as an index of stress and cognitive load (Ströfer, Noordzij, Ufkes, & Giebels, 2015). An EDA signal consists of two distinct levels: tonic and phasic EDA. The former are peaks in the EDA that happen spontaneously and show the psychophysiological activation of a person, while the fast-changing fluctuations in the phasic response are the result of a stimulating event (Setz et al., 2010). Since the making of a communication error is a discriminative event in the interaction, we will assess the phasic response to determine the effect of the error.

Current study

Following the four changes described above, Study 4.2 included 1) another scenario, as the interaction focused on a suspect interview around a money theft instead of a crisis negotiation with a suicidal person, 2) a measure to determine the law enforcement officer's perceptions of how the error is being received by the other side, 3) a manipulation of the stance of the suspect in either cooperative or non-cooperative, and 4) a measure to determine the EDA of an interviewer.

Professional police officers were asked to prepare a face-to-face suspect interview and they were assigned to a condition in a 2 (Error: factual, judgment) x 2 (Stance suspect: cooperative, non-cooperative) factorial design, or to a control condition in which no error was made. After pilot testing, we made a couple of small adjustments to the manipulation of Study 4.1 (i.e., as suspect interviews are usually more formal, we instructed the actor that he did not want to be approached formally instead of informally).

Method

Participants

Participants were 70 police officers from two police stations of the North-Eastern police region of the Netherlands who performed suspect interviews as part of their job description. Because our definition of communication error management requires the error sender (the interviewer) to (in)correctly use the name of the suspect, 2 interviewers from the factual condition who did not use the name were excluded from further analysis. Of the remaining 68 interviewers, 50 were male

(73.5%), their mean age was 41.2 years ($SD = 11.0$), they had an average interviewing experience of 13.4 years ($SD = 9.7$, Range: 1 month - 42 years), and they reported interviewing approximately 3.16 hours per week ($SD = 3.93$, Range 1– 25 hours). One-third (32.4%) reported having received specialized training in interviewing.

Measures

Negotiator's cognition and affect. We included the same post-experiment measures as in Study 4.1. Consistent with the findings of Study 4.1, we found significant correlations between our three negative affect items, $r's(66) = .25 - .66$, $p > .039$, and a principal components analysis (based on Eigenvalues greater than 1) revealed one underlying factor, explaining 62.62% of the variance. We thus again created a negative affect scale by averaging the scores on these three items (Cronbach's $\alpha = .70$).

Electrodermal activity (EDA). We recorded exosomatic EDA with an alternating current using a Empatica E4 wristband on the non-dominant wrist of the interviewer, as recommended by Picard, Fedor, and Ayzenberg (2016). The signal was recorded at 4Hz in μ Siemens (μ S). To extract the phasic from the tonic EDA signal, we executed a Continuous Decomposition Analysis using Ledalab (Benedek & Kaernbach, 2010). This is an algorithm written in MATLAB that proposes the integration of time to indicate event-related SNS activity. For the baseline measurement, we used five minutes of the EDA measured during the ten-minute preparation time before the interview. We utilized only minutes 2 through 7 to ensure that the interviewer was settled and that the baseline did not include the period immediately before testing, where EDA may have been higher because of anticipatory arousal (Elfering & Grebner, 2011)⁸. Since the SNS activity has a delay of 1-4 seconds and the law enforcement officer took maximally 10 seconds to respond, we chose a time window from 2-12 seconds after they had received the response from the suspect on the communication error. We decided to take the

⁸ For two participants, we had to take the baseline after 30 seconds, as we did not have a baseline that was long enough otherwise.

sum of the significant skin conductance response amplitudes, using a minimum amplitude threshold criterion of $.01\mu\text{S}$ (Boucsein et al., 2012). To control for individual variation in skin conductance, we subtracted the mean phasic EDA from the mean phasic EDA during the baseline measurement. Yet, it is important to note that although we controlled for individual variations by subtracting the baseline measurement, we still found high fluctuations in the amplitude sum of our EDA measurement, Range: -0.54 - $7.49\mu\text{S}$ (cf. Ströfer, Ufkes, Noordzij, & Giebels, 2016). The additional analyses were performed on log-transformed data, but the reported statistics in Table 4.4 were based on raw data in μS .

Perceptions suspect. We added three items to the post-experiment questionnaire to measure the extent to which interviewers could imagine how the suspect experienced receiving the error. Specifically, they were asked to respond on a scale from 1 (Not at all) to 5 (Very much) to three items, each measuring a different construct: ‘The suspect thought that I was capable in empathizing when I used the wrong name’ (affective trustworthiness); ‘The suspect perceived me as being competent when I used the wrong name’ (cognitive trustworthiness); and, ‘The suspect judged our relationship to be positive when I used the wrong name’ (rapport). A higher score on these items meant that the interviewer perceived the suspect to experience respectively more cognitive trust, affective trust, and rapport.

Procedure

Interviewers took part at work (i.e., at their police station) in a study that ‘focused on the difference between interviewing alone and together.’ They were told the wristband “measured their feelings” in order to obscure precisely what was being measured. The experiment required interviewers to role-play a face-to-face interview with a suspect of a mock theft. The role-play scenario, which was based on the work of Beune et al. (2009), was provided to interviewers in a police report that was formatted in accordance with police guidelines. In the scenario, Jaap Verhoeven was suspected of stealing €200 from the police academy. During a study on food habits in which Jaap participated, he had seen the opportunity to steal the money from the closet in the room of the

researcher. The report included information on the available evidence, including the statement of a witness who had seen the suspect near the closet. It was the task of the interviewer to gather information and determine whether the suspect was guilty. The interviewer had 10 minutes to read the file information, while the Empatica E4 was already attached to establish the baseline of their EDA.

After the ten-minute preparation time, the interviewer was asked to enter the interviewing room, which was a room used for actual suspect interviews in which the suspect (an experienced actor) was already sat. The suspect was unaware of the study's goal and he was instructed to behave naturally and give standardized reactions. Because of the nature of the error, the interviewer made the error at the beginning of the interaction, which means he or she had yet to familiarize themselves with the suspect's natural behavior and had sufficient time in which to enact a recovery. All interviews were audio recorded and ended by the experimenter after five minutes. After the interview, interviewers filled in the post-interview questionnaire and were debriefed.

Error manipulation. Each interviewer was assigned to one of the three error conditions: factual, judgment or control. The factual and control condition replicated Study 4.1. The judgment error related to formality in tone and received from the suspect the response 'How dare you address me formally!'

Stance manipulation. After the error was made, the interviewer would either receive a cooperative or non-cooperative response. In the former, the suspect replied with the sentence 'No problem, that also happens to me every now and then' and in the latter the suspect sighed and replied, 'I don't care about your interview.'

Response coding

Using verbatim transcripts of each interview, the first author read the responses and classified them using the same categories as Study 4.1 (i.e., apologize, exploration, deflect, and no alignment). The same independent coder as used in Study 4.1 also classified the four different forms of responses. Again, we assigned each response to whatever category that was most prevalent within the response, and this resulted in an excellent level of inter-rater agreement

(Cohen's $\kappa = .80$). All disagreements were resolved through discussion. Out of the 49 responses, 2 included a combination of responses. Specifically, they both combined exploration and no alignment.

Results

Preliminary analysis

Table 4.4 presents the Means, SDs, Cronbach alphas, and zero-order correlations among the study variables. As expected and in line with patterns found in Study 4.1, Table 4.4 shows high correlations between the cognition measures of stress and distraction, and negative affect. In addition, there are negative correlations between the cognition and affect measures, and what interviewers anticipated as the suspect's perceptions of affective trust, cognitive trust, and rapport. Surprisingly, there is no significant correlation between EDA and the self-reported stress and distraction measures.

Table 4.4 Means, standard deviations, and inter-correlations among study variables in Study 4.2 ($N = 68$)

Variables	M	SD	1	2	3	4	5	6	7	8	9
Gender ^a	1.26	0.44									
Age	41.18	11.04	-.19								
Experience ^b	13.41	9.71	-.12	.59*							
Stress	2.29	1.02	.02	.05	-.08						
Distraction	2.47	1.11	-.01	.04	-.21	.49*					
Negative affect	1.48	0.64	-.07	.16	-.20	.36*	.53*				
Cognitive trust	2.54	1.00	.01	.07	.28*	-.25*	-.30*	-.43*			
Affective trust	2.79	0.86	-.01	-.03	-.02	-.20	-.24*	-.40*	.50*		
Rapport	2.53	0.95	-.02	.07	.12	-.24	-.27*	-.43*	.59*	.65*	
EDA	0.59	1.33	-.16	.04	-.05	.18	.04	-.02	-.21	.04	.08

^a 1 = Male, 2 = Female, ^b $n = 65$, * $p < .05$

Hypothesis testing

Error effects. Table 4.5 presents the interviewer's cognition and affect as a function of communication error. To test our predictions that the making of a judgment or factual error by an interviewer leads to more stress, distraction, and negative affect compared to the making of no errors (H1a), and that this effect will be stronger for a judgment error than a factual error (H1b), we conducted a one-way MANOVA with communication errors as the Independent Variable and the three cognition and affect measures as the Dependent Variables. There was a significant multivariate effect of error type, $F(6, 128) = 4.48, p < .001$, with interviewers reporting significant differences in stress, $F(2, 67) = 4.30, p = .018, \eta^2 = .117$, distraction, $F(2, 67) = 10.19, p < .001, \eta^2 = .239$, and negative affect, $F(2, 67) = 11.27, p < .001, \eta^2 = .257$.

In comparison to the control condition, the making of a factual error led to more stress, $t(39.55) = 3.05, p = .004, d = .937, 95\%CI [.30, 1.57]$, distraction, $t(40.85) = 4.45, p < .001, d = 1.37, 95\%CI [.69, 2.03]$, and negative affect, $t(25.62) = 5.41, p < .001, d = 1.66, 95\%CI [.90, 2.40]$. A set of equivalent effects with lesser magnitude were found when comparing a judgment error to control, as it led to more distraction, $t(41.13) = 3.74, p = .001, d = 1.14, 95\%CI [.49, 1.78]$, and negative affect, $t(28.32) = 3.58, p = .001, d = 1.09, 95\%CI [.42, 1.74]$, but there was no significant difference in stress, $t(40.86) = 1.80, p = .079, d = .548, 95\%CI [-.06, 1.15]$. In comparison to a judgment error, the making of a factual error led to more negative affect, $t(44.19) = 2.04, p = .047, d = .583, 95\%CI [.01, 1.15]$, but there was no significant difference in stress and distraction, $t < 1.22$

To test the outcomes of our EDA measurement, we conducted a one-way ANOVA with communication errors as the Independent Variable and by using EDA as the Dependent Variable. There was no significant difference in EDA, $F(2,67) = 0.55, p = .577, \eta^2 = .017$.

Table 4.5 Means and standard deviations for suspect interviewer's cognition and affect as a function of communication error in Study 4.2 ($N = 68$)

	Communication errors					
	Control ($n = 19$)		Factual ($n = 24$)		Judgment ($n = 25$)	
Interviewer's cognition and affect	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Stress	1.79	0.92	2.67 ^a	0.96	2.32	1.03
Distraction	1.63	0.83	2.96 ^a	1.12	2.64 ^a	0.95
Negative affect	1.04	0.15	1.85 ^{a,b}	0.72	1.47 ^{a,b}	0.58

^a Differs significantly from control, $p < .05$.

^b Differs significantly from the other communication error, $p < .05$.

Enacted response strategies. Table 4.6 presents the regression coefficients of the enacted response strategies as a function of the interviewer's cognition and affect. In contrast to the previous study, the interviewers predominantly used the exploration ($n = 30$) and deflect ($n = 14$) response strategies (apologize, $n = 2$, and no alignment, $n = 3$). To test our predictions that interviewers' stress, distraction, and negative affect effected their choice of response (H2a and H2b), we performed binary logistic regressions with stress, distraction, and negative affect as predictors in parallel and the two response strategies exploration and deflect as binary Dependent Variables (0 = not used, 1 = used). We decided to not assess the apologize and no alignment response strategies, as the number of interviewers using that strategy was very low and no reliable estimations could be made. As can be seen from Table 4.6, the full models for predicting exploration and deflect were not significant. In contrast with H2a and H2b, stress, distraction and negative affect were no significant predictors for exploration and deflect.

To test the outcomes of our EDA measurement, we performed binary logistic

regressions with EDA as predictor and the two response strategies exploration and deflect as binary Dependent Variables (0 = not used, 1 = used). The full model of predicting exploration was non-significant, $X^2(1, N = 49) = 0.34, p = .560$, and explained 0.9% (Nagelkerke R^2) of the variance. The full model of predicting deflect was also non-significant, $X^2(1, N = 49) = 0.12, p = .734$, and explained 0.3% (Nagelkerke R^2) of the variance.

Table 4.6 *Regression, standard deviations, and odds ratio of coefficients for enacted response strategy as a function of interviewer's cognition and affect in Study 4.2 (n = 49)*

Interviewer's cognition and affect	Response strategies					
	Exploration ^a (n = 30)			Deflect ^b (n = 14)		
	B	SE B	Exp b	B	SE B	Exp b
Constant	0.48	1.02	1.62	-0.27	1.10	0.77
Stress	-0.18	0.35	0.83	0.14	0.37	1.15
Distraction	-0.10	0.36	0.91	-0.03	0.38	0.97
Negative Affect	0.43	0.51	1.54	-0.57	0.57	0.57

* $p < .05$. ^a $X^2(3, n = 49) = 0.99, p = .804, R^2 = 0.027$, ^b $X^2(3, n = 49) = 1.24, p = .743, R^2 = 0.036$ (Nagelkerke).

Error effects on other party. Table 4.7 presents interviewers' mean responses to the questions regarding the expected suspect perceptions, as a function of communication error. To test our predictions that error type will affect perceptions of how the suspect will feel (H3a and H3b), we conducted a one-way MANOVA with communication errors as the Independent Variable and the three suspect perception measures as the Dependent Variables. There was a significant multivariate effect of error type, $F(6, 128) = 5.46, p < .001$, with interviewers reporting significant differences in affective trust, $F(2, 67) = 11.87, p < .001, \eta^2 =$

.268, cognitive trust, $F(2, 67) = 6.75, p = .002, \eta^2 = .172$, and rapport, $F(2, 67) = 11.01, p < .001, \eta^2 = .253$. In comparison to the control condition, the making of a factual error led to less perceived affective trust, $t(34.95) = -4.13, p < .001, d = -1.27, 95\%CI [-1.93, -.59]$, cognitive trust, $t(39.56) = -4.84, p < .001, d = -1.49, 95\%CI [-2.16, -.79]$, and rapport, $t(38.06) = -4.85, p < .001, d = -1.49, 95\%CI [-2.17, -.79]$. A set of equivalent effects with lesser magnitude were found when comparing a judgment error to control, as it led to less perceived affective trust, $t(38.15) = -2.12, p = .040, d = -0.65, 95\%CI [-1.26, -.03]$, and rapport, $t(40.99) = -3.32, p = .002, d = -1.01, 95\%CI [-1.64, -.37]$, but there was no significant difference in cognitive trust, $t < 1.32$. In comparison to a judgment error, the making of a factual error led to less cognitive trust, $t(46.91) = -3.49, p = .001, d = -1.00, 95\%CI [-1.59, -.40]$, but there was no significant difference in affective trust and rapport, both t 's < 1.84 .

Table 4.7 Means and standard deviations for suspect interviewer's expected suspect perceptions as a function of communication error in Study 4.2 ($N = 68$)

	Communication errors					
	Control ($n = 19$)		Factual ($n = 24$)		Judgment ($n = 25$)	
Interviewer's expected suspect perceptions	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Affective trust	3.26	0.45	2.38 ^a	0.92	2.84 ^a	0.85
Cognitive trust	3.11	0.81	1.87 ^{a,b}	0.85	2.76 ^b	0.93
Rapport	3.26	0.81	2.08 ^a	0.78	2.40 ^a	0.91

^a Differs significantly from control, $p < .05$.

^b Differs significantly from the other communication error, $p < .05$.

Error effects and stance other party. Table 4.8 presents interviewers' mean reported cognition and affect as a function of communication error and stance. To test whether our stance manipulation worked, we compared the stance across

the expected suspect perceptions. In comparison to the cooperative suspect ($n = 25$), the non-cooperative suspect ($n = 24$) led to lower perceptions of affective trust ($M = 2.21, SD = 0.83$ vs. $M = 3.00, SD = 0.82$), $t(46.82) = -3.36, p = .002, d = -0.96, 95\%CI [-1.55, -.36]$, and rapport ($M = 1.88, SD = 0.68$ vs. $M = 2.60, SD = 0.87$), $t(45.24) = -3.27, p = .002, d = -0.93, 95\%CI [-1.52, -.34]$, but there was no significant difference in cognitive trust ($M = 2.17, SD = 0.92$ vs. $M = 2.48, SD = 1.05$), $t < 1.12$.

Table 4.8 Means and standard deviations for interviewer's cognition and affect as a function of communication error and stance in Study 4.2 ($n = 49$)

	Error type - stance							
	Factual-cooperative ($n = 12$)		Factual-non-cooperative ($n = 12$)		Judgment-cooperative ($n = 13$)		Judgment-non-cooperative ($n = 12$)	
Interviewer's cognition and affect	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Stress	2.58	0.97	2.75	0.97	2.31	1.03	2.33	1.07
Distraction	3.25	1.14	2.67	1.07	2.54	1.05	2.75	0.87
Negative affect	1.92	0.78	1.78	0.67	1.46	0.66	1.47	0.50

To test our prediction that the impact of an error on interviewers' experienced stress, distraction, and negative affect, is stronger when the suspect is non-cooperative compared to cooperative (H5), we conducted a two-way MANOVA with communication errors and stance as the Independent Variables and the three cognition and affect measures as the Dependent Variables. We found no significant interaction effect for communication errors and stance, $F(3, 43) = 0.97, p = .414$.

To test the outcomes of our EDA measurement, we conducted a two-way ANOVA with communication errors and stance as the Independent Variables and EDA as the Dependent Variable. We found no significant interaction effect for communication error and stance, $F(1, 45) = 0.55, p = .464$.

Additional analysis

Although we did not have any predictions as to whether certain responses were used more often after a specific type of error, it is interesting to explore whether such a relationship is present. Consequently, we performed a chi-square test and a significant relationship could be found between error type (factual vs. judgment) and first response, $\chi^2(3, n = 49) = 10.22, p = .017$. Consistent with Study 4.1, the interviewers were most likely to use exploration after a factual error (83.3% within error condition), but a deflect response after a judgment error (respectively 40.0% and 44.0% within error condition).

Discussion

This is the first empirical study of communication errors in law enforcement interactions from the perspective of the error sender. Our findings suggest that the negative effects of communication errors occur irrespective of context, since making both factual and judgment errors increased the experienced negative affect (Study 4.1 and 4.2), stress in crisis negotiations (Study 4.1) and distraction in suspect interviews (Study 4.2). However, and contrary to what research on receiver studies would suggest (Oostinga et al., 2018-b), the effects of a factual error appear more severe than those of a judgment error. A factual error is viewed as more distracting than a judgment error in crisis negotiations (Study 4.1), while a factual error leads to more negative affect than a judgment error in suspect interviews (Study 4.2). A possible explanation for this finding may be sought in how officers perceive a factual mistake. Unlike a judgment error, they may perceive that their professional integrity is at stake, since they appear to have used the incorrect information. The perception reported by interviewers in Study 4.2 that factual errors harm cognitive trust supports this account.

However, it remains the case that our results are not in line with Oostinga et al.'s (2018-b) finding that, from the receiver's perspective, errors of judgment have a more detrimental impact on cognition and affect. This suggests that it is

not so much the impact of the error on the other party that is important, but it is the effect of the error on how the officer perceives his or her reputation. This may also be the reason why the stance of the other party did not moderate the impact of errors in Study 4.2. Another possible explanation may be that errors of judgment are encountered more regularly by officers and that through experience they have learned what to 'let pass' and when to act (Williams, 1999). It would, therefore, be interesting to test the impact of other forms of factual and judgment errors to see whether a reputation or experience-based account is driving the effect of errors on the sender that we observed (for examples of other errors, see Oostinga et al., 2018-a).

Our findings revealed interesting associations between response strategies and the cognition and affect of the negotiators. Specifically, the more stress and less distraction, the more negotiators apologized; the more stress, the more negotiators reacted with exploration; and the less negative affect the more negotiators used deflect (Study 4.1). Yet, we did not find these effects in the suspect interview setting (Study 4.2). A possible explanation can be sought in the different range of responses used across these settings. That is, negotiators used all four regularly, while interviewers predominantly used exploration and deflect. This may be the result of the difference in role and power position of the law enforcement officers in these two types of interaction. A crisis negotiator focuses on information gathering to provide care and help, while a suspect interviewer is predominantly focusing on information gathering to detect crime. While the former may not know how to respond to factual error and proceeds by not aligning, may the latter be more concerned with understanding what is going on and start to explore for more information. Next to that, these roles seek for different types of actions, because the initial power positions between the actors are different. Within a crisis negotiation the suspect is frequently seen as being higher in power - especially in the first phase of the interaction - than a suspect in an interview setting (Abbe & Brandon, 2013; Vecchi et al., 2005). Donohue and Taylor (2003) refer to this phenomenon as the 'one-down effect'. This is not necessarily the person who is in charge of the interaction, but it is the person

who experiences a threat to their identity. The person that believes that he/she is one-down tries to regain power by using more competitive communication behavior. In a crisis negotiation, the suspect may be high in power and using an apology response may be effective, as it consolidates this position and mitigates the possible impact of an error (Taylor, 2002a). Using an apologize response may, however, not be effective in a suspect interview, as the interviewer may threaten his/her power position and trustworthiness. Something the interviewers already considered to be jeopardized when estimating the impact of (factual) errors on the other side (Study 4.2). It is interesting to find out whether it is the role and/or power position of the law enforcement officer and suspect that explains our results.

Remarkably, we did not find a relationship between the self-reported stress and distraction (form of cognitive load) in our correlational analyses and no significant results for our additional analyses. A possible explanation for not finding these effects may be sought in the large fluctuations in our results. Although we controlled for individual differences by using a baseline measurement, the results still varied immensely which may have kept us from finding any effects. For future studies, it would be useful to use a within-subject paradigm in which people act appropriately and make errors within the same interaction.

The current studies are not without limitations, and we will highlight the four most important ones. First, we did not assess the effect of non-verbal behavior of the law enforcement officer. Yet, the interaction mediums that we have used, i.e., phone and face-to-face, coincide with additional features that may have influenced our results. From communication research we know that interaction media differ on the amount of information that can be conveyed or in their terms: information richness (Poole, Shannon, & DeSanctis, 1992; Walther, 2011). This is a combination of feedback time, support of verbal and non-verbal behavior, freedom of choosing your own words over procedural language, and the extent to which you can personalize your messages by integrating knowledge on the other person. When comparing these interaction media, face-to-face is higher

in information richness than telephone, as it has lower feedback time, it enables the observation of non-verbal behavior, it requires no procedural language, and it is possible to integrate foreknowledge. All these features may have an impact on the outcomes of our observed communication behavior, being either positive or negative. For example, it is previously argued that the tone of the response strategy determines whether something is considered sincere or not (Oostinga et al., 2018-a), and in turn research shows that sincerity determines whether responses lead to forgiveness or not (Zheng et al., 2016). Follow-up research may therefore take non-verbal behavior into account and find out how our findings translate to other interaction media.

Second, we used actors to play the role of suspects in both studies, as we wanted to assess interaction patterns that cannot be observed easily within natural crisis negotiations and suspect interviews. That is, within normal law enforcement interactions, the type of errors cannot be held constant so easily, as each suspect responds differently to errors. Yet, the use of confederates may change the nature of the interaction (Kuhlen & Brennan, 2013). We minimized the impact by ensuring that the actor did not know what we wanted to measure, by only partly scripting the behavior, and by putting the error at the beginning of the interaction. Yet, future research could consider a design in which the suspect is played by different people who spontaneously respond to the error without specific instructions or previous experience (see e.g., Giebels et al., 2017).

Third, our coding took the most prevalent response strategy, but our results show that law enforcement officers did sometimes use a combination of responses. Arguably, the fact that multiple coders achieved excellent coding reliability suggests that most responses did have a dominant strategy. But, given evidence that the effects of a response can be altered at a word-by-word (Borkin & Reinhart, 1978) and component level (Kirchoff et al., 2012), it would be interesting to further disentangle the different facets of a response. Not least, because service recovery literature shows that a combination of responses leads to the highest response satisfaction (Hocutt et al., 2006). Our results do provide some first directions for combinations of responses that are of interest for law enforcement interactions.

There is already research available that focuses on the effects of errors and responses in law enforcement interactions from a receiver's perspective, yet this is the first to unravel the error sender's side. It helps us understand what happens with the law enforcement officer once they have made an error, and how this affects their ultimate response. Moreover, it provides us insights for more practice-oriented problems. First, law enforcement officers face the unexpected all the time, so preparing them for something unexpected is crucial. Our paradigm, that is designed as a prototypical exercise for training, provides perfect input for such a preparation. Second, factual errors appear to have a larger negative effect on the law enforcement officer than judgment errors, while it is the other way around for the suspect. It is important to create awareness to this difference, as it may lead the law enforcement officers to convey the type of response that would effectively satisfy the needs of the suspect instead of their own which facilitates reconciliation.

Chapter 5

General discussion

General discussion

Over the last two decades, researchers have started to establish what law enforcement officers should say and do to make the other party cooperate in high-stake interactions, such as suspect interviews and crisis negotiations (Meissner et al., 2014; Rogan et al., 1997). In my doctoral thesis, I focused on the other side of the coin and assessed what happens when law enforcement officers say something in error. I unravelled the impact of errors and the effectiveness of responses from both the perspective of the suspect (error receiver) and the law enforcement officer (error sender). I found that errors can have both positive and negative effects, but that it is the law enforcement officer's follow-up response that determines its overall impact. In this chapter, I will summarize the main findings of my empirical work, describe the academic implications and limitations, elaborate on the practical implications, and conclude with some final remarks.

Summary of the main findings

'An error is feedback'

In Chapter 2, I presented the results of my interviews with professional crisis negotiators to establish a basis for the type of errors that may occur, the response strategies that a negotiator could enact, and how the making of errors in general is evaluated. I used a grounded-theory approach (Glaser, 2002) to unravel these three topics. Following the interviews, the errors mentioned by the negotiators could usefully be distinguished into three types: factual, judgment and contextual errors. This classification is in line with studies of discourse from other areas (e.g., Bohus & Rudnicky, 2005; Halverson et al., 2011; Skantze, 2005; Vignovic & Thompson, 2010). In addition, the negotiators mentioned using four types of response: accept, apologize, attribute, and contradict. When comparing this with a general classification of response strategies of Benoit (1997), I could match three of the four strategies. That is, apologize matched the mortification

category and the attribute and contradict were like the two denial subcategories (i.e., shift the blame and simple denial). The category accept, however, did not fit any specific category. When evaluating the error process, crisis negotiators predominantly adhered to an error management approach. In this strategy the error maker focuses on the inevitability of errors and how they can provide opportunities for learning. This strategy is in sharp contrast with the error prevention approach in which errors are determined as detrimental and should be prevented at all cost (Bell & Kozlowski, 2008; Dimitrova et al., 2014; Keith & Frese, 2005). Even more extreme, the negotiators considered errors within the interaction itself as positive because they, in their words, provided opportunities to receive feedback. They argued that errors can be used to trigger emotions with the other side so that they start to talk.

The question that remains, however, is whether the approach that the negotiators argue to be adhering to is effective. That is, if errors are primarily identified as opportunities for feedback, law enforcement officers may neglect the negative effect of errors from the receiver's perspective. In turn, this insensitivity may undermine the use of an appropriate response (Weick & Suttcliffe, 2007). Thus, although it may decrease the psychological impact of the errors on the self, being aware of the consequences of errors may increase effective error handling (Weiner, 1985). How to get the positive aspects of both error approaches working in close harmony, is an interesting challenge for future research.

Error receiver's perspective

In chapter 3, I presented the results of two studies to unravel the impact of errors and the effectiveness of responses found in the interviews study from the perspective of the suspect (the error receiver). Specifically, I focused on two types of errors (factual and judgment) and three types of responses (contradict, accept and apologize). I did not assess context errors, because the suspect is not necessarily the locus of control. Next to that, I did not assess the attribute response, as we were interested in the effect of a law enforcement officer taking full responsibility or not. Since there was no domain-specific research to build

on, I followed organizational and management literature to determine the key factors when considering the impact of errors and responses (e.g., Reb et al., 2006; Thoroughgood et al., 2013; Vignovic & Thompson, 2010). First, I focused on affective (i.e., perceived ability to care and concern) and cognitive trust (i.e., perceived reliability in performing the task). Second, I assessed rapport and hostility, which respectively represents a cooperative and non-cooperative relational focus. Third, I considered the willingness to provide information and the actual information provision. I tested these effects in both the suspect interview (Study 3.1) and crisis negotiation setting (Study 3.2). Following the leadership literature (Thoroughgood et al., 2013; Vignovic & Thompson, 2010), I expected that errors would have a negative impact on the suspect and more so for judgment errors than factual errors. Following experimental research in error reconciliation (Dutta & Pullig, 2011; Fukono & Ohbuchi, 1998), I expected that especially contradict would negatively effect the suspect's cognition, affect and behavior. In contrast, I expected that apologize and accept were most effective as they reconciled most negative aspects of the error.

The results from the suspect interview study clearly showed that (judgment) errors had a negative effect on affective trust and rapport, irrespective of the response strategy used (Study 3.1). In the crisis negotiation study, however, I did not find this effect and it was the response that mattered most (Study 3.2). Remarkably, I did find a positive effect of errors in both type of interactions in that the suspect shared more information. With regards to the response strategies I found that in both settings, accept was beneficial for rapport, while contradict threatened it. Yet, accept was most effective in resolving the willingness to provide information in suspect interviews, while apologize was most effective for re-establishing affective trust and rapport in crisis negotiations.

The question that remains is what the driving factor is behind the different error effects. A possible explanation may be sought in the impact of the error on the identity of a person. When a judgment error is made, this may have the largest impact on the identity of the error receiver, because he/she is not addressed appropriately thus undermining their self-respect. By contrast, when

a factual error is made this may have the largest impact on the identity of the error sender, as it may call into question their ability to perform their job. This explanation is consistent with Ren and Gray's (2009) argument that identities are constantly being negotiated through dialogue. This may also explain why I found different effects in both contexts, as the initial position of the person who is highest in power likely differs over these interactions. That is, in a suspect interview, the law enforcement officer is in charge, while in a crisis negotiation the suspect is in charge (see Section 1.2). A threat to the identity of a suspect in an interview may consequently be larger than a threat to the identity of a suspect in a crisis negotiation, who feels he or she is already in charge.

Another unresolved question is what the driving factor is behind these different patterns of response strategies for suspect interviews and crisis negotiations. A possible clarification might be sought in the difference in needs of the suspect. In a suspect interview, the suspect might be more in need of an authority, as a correct report should be made. In a crisis negotiation, the suspect might be more in need of attention to regulate their emotions. Arguably, the error maker is more authoritative in an accept response correcting the record, while in an apology response, the error maker focuses on showing understanding and empathy. This line of reasoning is supported by the finding that apologizing appears to replenish the receiver's need for belongingness and meaningful existence in crisis negotiations (Study 3.2). Yet, it would be interesting to test this further to determine how a law enforcement officer could differentiate the responses to their errors to better align with the needs of the suspect.

Error sender's perspective

In Chapter 4, I reported the results of two studies examining the impact of errors from the perspective of the law enforcement officer (error sender). Next to that, I assessed which responses law enforcement officers used and assessed explanatory factors for why they enacted these responses. In line with the error receiver studies, I followed organizational and management literature to determine the key factors when assessing the impact of errors (e.g., Dimitrova et

al., 2014; Dimitrova et al., 2016; Rybowski et al., 1999). I considered the impact of errors on a law enforcement officer's stress and distraction, and negative affect (i.e., self-oriented anger, shame and guilt). Again, I assessed these effects in the crisis negotiation (Study 4.1) and suspect interview setting (Study 4.2). Based on the organizational literature (Brodbeck et al., 1993; Rybowski et al., 1999) and the outcomes of the receiver studies, I expected that errors had a negative impact on a law enforcement officer's stress, distraction and negative affect, and that this accounted more for judgment errors than factual errors. I also expected that their response to making an error would depend on the law enforcement officer's cognition and affect.

In both settings we found that the making of an error led to more negative affect. Next to that, we found that it increased stress in crisis negotiation and distraction in suspect interviews. However, and in contrast with the receiver studies, we found that factual errors were more impactful than judgment errors. That is, factual errors led to more distraction in crisis negotiation and more negative affect in suspect interviews. After transcribing and content-coding the responses, I found four types of responses: apologize, exploration, deflect, and no-alignment. The use of these responses was dependent on the setting. That is, crisis negotiators used all four responses, while interviewers predominantly used exploration and deflect. The use of the response strategy was associated with cognition and affect, but only for negotiators and not for interviewers.

The question that remains is why the prevalence of using these responses differs across crisis negotiations and suspect interviews. One explanation concerns the difference in role and power position between the law enforcement officer and the suspect in these types of interaction (see Section 1.2). Within a crisis negotiation, the focus is on providing help. Within a suspect interview, the focus is on gathering information. This may increase the use of exploration in suspect interviews, as the law enforcement officer tries to understand what is going on by seeking information. Moreover, within a suspect interview, the interviewer may be perceived high in power in comparison to the suspect by both parties, but in a crisis negotiation the negotiator may be perceived low in power.

Donohue and Taylor (2003) refer to this phenomenon as the 'one-down effect'. This power position does not necessarily refer to the person who controls the interaction but focuses on who believes that their identity is at stake. In turn, the person who considers him or herself as being one down in position may use more competitive responses to regain power. Using an apologizing response may consequently not be effective in a suspect interview, as the interviewer may lose his/her power position and credibility. This is something the interviewers considered to be at stake when estimating the impact of (factual) errors on the other side (Study 4.2). In contrast, in a crisis negotiation, the suspect may - especially in the first phase of the interaction - be high in power and uttering an apology may consolidate this position of the suspect and soothe them (Taylor, 2002a). It would be interesting to test whether or not the role and power position of the law enforcement officer and suspect do indeed explain my results.

Theoretical implications and limitations

Error and response types

Following the results of the interviews, I identified three distinct types of communication errors (factual, judgment and contextual) and four types of responses (accept, apologize, attribute and contradict). However, when I observed the actual communication behavior of the law enforcement officers in our field studies, I also found responses that they did not identify in the interviews. That is, next to the expected apologize and deflect, I found exploration and no alignment. All four of these responses were used in crisis negotiations and suspect interviews, but which response prevailed was context-dependent. The findings stemming from my examination of these four responses has three implications for future research. First, they provide a framework in which communication errors in law enforcement interactions can be classified. Second, I created a basis of responses that law enforcement officers use. Third, my studies seem to indicate that it is difficult for crisis negotiators to recall what type of response they give and the use of these responses is context dependent.

A limitation of the communication error classification is that I asked crisis negotiators to focus on errors that may happen within crisis negotiations specifically. Consequently, I did not assess what specific type of errors may occur within suspect interviews. Although I have reasons to believe that these types of errors may also occur in suspect interviews, because our classification is in line with many other error frameworks (e.g., Bohus & Rudnicky, 2005; Halverson et al., 2011; Skantze, 2005; Vignovic & Thompson, 2010), I stopped short in showing examples of this setting.

A limitation of the response classification is that I have used very broad categories of responses in the interview study (Chapter 2) and sender studies (Chapter 4), and very simple forms of responses in the receiver studies (Chapter 3). I did this to establish the global patterns of the use of responses and their effectiveness. It may, however, be worthwhile to fine-tune the classification and scrutinize the responses in more depth. For example, research in apologies shows that the effectiveness of an apology for reconciliation may vary on a word-by-word level (Borkin & Reinhart, 1978) and by which reconciling components are included within the apology (Kirchoff et al., 2012). Similarly, it is known from research in service recoveries that a combination of responses leads to the highest satisfaction with the response (Hocutt et al., 2006). Our sender studies (Chapter 4) showed that the law enforcement officers sometimes did use combinations of strategies and this may be an interesting avenue to follow-up.

Errors and their effects

When assessing the errors and their effects in the error receiver studies, I found that errors have both positive and negative effects, but that this effect is context dependent. In addition, when combining the error receiver and sender studies, I observed a contrasting result: judgment errors have a more detrimental impact on the receiver, while factual errors have a more negative impact on the error sender. These findings lead to four implications that may be important to consider in future research. First, my studies show that communication errors do not necessarily have negative effects only. Second, my studies show that

different types of errors may impact an error receiver or sender differently. Third, my studies underline the notion that erring within an interaction can only be understood when considering both parties, as errors do not necessarily affect the interaction partners in the same manner. Fourth, my studies stress that the impact of errors is context dependent.

Because of the error management definition that I used, I focused on the situation in which the error receiver mentioned that an error was made. What I did not assess, however, is the situation in which the error receiver did notice the error, but did not report it. The question therefore is what the law enforcement officer could do in these situations, as he/she is unaware that an error occurred. It may be interesting to focus on this in future research, since these 'sleeping' errors may unconsciously have a negative impact on the interaction. Indeed, customer service recovery research shows that people who noticed an error but did not report it were just as unsatisfied with the service and spread as much negative word-of-mouth behavior, as people who received improper service recoveries in terms of courtesy and atonement (Hocutt et al., 2006).

Responses and their effects

When assessing the receiver studies, I found that the effectiveness of using responses is context-dependent. In addition, in a crisis negotiation, I could predict the use of a response following cognition and affect, while this was not possible in a suspect interview. These findings lead to two implications that may be useful for future research. First, I have offered new insights on what should be considered effective communication in law enforcement interactions. Second, context influences whether a response is effective or not.

An interesting avenue for future research from the sender's perspective is to assess their error approach, like I initiated in Study 4.1. Organizational research shows that using an error management approach in training leads to better performance in comparison to trainings in where an error prevention or no strategy is enacted (Heimbeck et al., 2003). More recent research shows that this better performance can be explained by the notion that error prevention leads to fewer

on-task thoughts, more negative thoughts about achievements, and less flexibility in solving other problems. In contrast, error management decreases the associated stress while making an error (Dimitrova et al., 2014; Dimitrova et al., 2016). In Study 4.1, I included a measure to determine the error approach that negotiator enact in their work. The results, however, indicated that negotiators scored high on error management, low on error prevention and that there were no relationships between the error approaches and the psychological and behavioral impact of errors on the negotiator. A possible explanation for not finding these effects may be sought in the fact that our study was part of a crisis negotiation course or training. The ultimate goal of these sessions is to show that the negotiator masters negotiating skills, so reporting that you are good in managing errors may have been the obvious and socially desirable answer. It therefore remains unclear whether the enacted error approach of a law enforcement officer affects the communicative behavior in these high-stake settings.

Another limitation is that I focused on error receivers from the Netherlands and Germany and error senders from the Netherlands. Yet, research shows that how responses are evaluated and how errors are being approached and responded to is different across cultural backgrounds (Brodbeck et al., 2000). For example, collectivistic people feel more fairly treated when the response is initiated by the offending organization, while such an effect is not found by individualistic people (Patterson et al., 2006). Similarly, German leaders score higher on error prevention than Dutch leaders (Van Dyck et al., 2005), so the impact of errors may be different. It would therefore be interesting to test how my findings translate to people from other cultural backgrounds. This is important because the number of suspects originating from other cultural backgrounds has increased massively over the past decades (Giebels & Taylor, 2009; Taylor & Donohue, 2006).

Paradigms in different interaction media

In the four experimental studies discussed in Chapter 3 and 4, I have used different paradigms to assess communication error management across distinct interaction mediums. In Study 3.1 and 3.2 the interaction is an online chat, in

Study 4.1 the interaction is via the telephone, and in Study 4.2 the interaction is face-to-face. The creation of these paradigms has three implications. First, all studies assess communication error management in a dialogue over time, which enables researchers to assess next to cognition and affect the actual communication behavior. Second, the created experimental paradigms can be used to assess communication error management across online chat, telephone and face-to-face situations. Third, I assessed law enforcement interactions, but these paradigms can also be used to inspire research in interactions that concern arguably low stakes (e.g., leader-employee interactions, job interviews, classroom interactions) or high-stakes (e.g., pilot to tower conversations, victim-offender mediations, asylum investigations, human intelligence interviews).

A limitation of using these different interaction media is that it is known from general communication research that the interaction medium determines the amount of information that can be conveyed (Poole et al., 1992; Walther, 2011). Usually this amount of information is asserted to as information richness, which is a combination of the feedback time, ability to support cue systems (e.g., verbal and non-verbal behavior), the extent to which people can speak a natural language (e.g., not possible if rules and procedures requires formal language), and message personalization (e.g., integrating knowledge about that other person in the message). Face-to-face interaction is considered the highest form of information richness, as the feedback time is low, all cue systems are supported, natural language can be spoken, and messages can be personalized. When comparing face-to-face communication to dialogues over the telephone and via written messages, these latter two-interaction media are declining in information richness respectively (Walther, 2011). Although the general theoretical claim is that the richer the media, the better the information can be conveyed, the impact of these distinct aspects of the communication media is not as obvious as theory suggests (Poole et al., 1992).

Experimental research suggests that face-to-face in comparison to telephone and text-only communication leads to more cooperative behaviors such as truth telling and rapport building, because of social norms in this setting (Drolet &

Morris, 2000; Valley, Moag, & Bazerman, 1998). Other experimental research also indicates that text-only in comparison to face-to-face communication leads to more non-cooperative behaviors such as the use of pressure tactics, inappropriate language, and rude responses. This is because it lowers the social awareness of a person (Dubrovsky, Kiesler, & Sethna, 1991; Griffith & Northcraft, 1994; Lewis & Fry, 1977; McGinn & Croson, 2004). This suggests that my online error receiver studies may be a conservative test of the effects in telephone or face-to-face settings, while my error sender studies may be more accurate. Yet, as argued before, the information richness of interaction media provides many complicating factors that possibly mediate these effects and the context of the interactions under scrutiny notwithstanding. Therefore, my findings should be tested in other communication media in future research to determine how my findings translate to these settings, not least because using more than one interaction medium has become the primary characteristic of interpersonal interactions nowadays (McGinn & Croson, 2004; Walther, 2011).

A related limitation is the fact that I have used experimental set-ups to test my findings. This may have affected the communicative behavior of the suspects and law enforcement officers. The suspects had to imagine that they had committed exam fraud or barricaded themselves (Chapter 3). This may lead to the argument that the participants did not feel genuinely guilty, because they did not commit the crime of which they were accused. The law enforcement officers also had to imagine that they were negotiating with or interviewing a real suspect (Chapter 4). Given this, one might question whether they showed as much commitment to their identity as in actual interactions where the stakes are high (i.e., finding the truth, peaceful resolution). I do, however, have reasons to believe that the suspects and law enforcement officers were taking their jobs very seriously, as they showed obvious signs of stress and nervousness. Next to that, I wanted to assess interaction patterns that cannot be observed easily in natural law enforcement interactions, as communication behavior varies. Therefore, I used a fictional character and actors to keep the errors (and responses in the receiver studies) constant. Yet, it is important to test the effect of errors and effectiveness

of response strategies in authentic suspect interviews and crisis negotiations to strengthen the ecological validity of my findings. Not the least because Taylor and Donald (2004), for example, suggest that actual negotiations in comparison to simulated training interactions show more variability in the communicative behavior.

A final limitation is that I focused on the suspect and law enforcement officer on their own, while in actual suspect interviews and crisis negotiations more people are usually present. For example, in a suspect interview there may be a second interviewer, an interpreter and a lawyer, and in a crisis negotiation there may be a second negotiator, a tactical team, the media, and relatives of the perpetrator (Ewens et al., 2016; Giebels & Noelanders, 2004; St-Yves & Michaud, 2012). This wide range of people who each have different interests may increase the making of errors or complicate the decision on how to respond. That is, the different interests may make the external pressure higher, which is known to be related to an increase in errors in other contexts (Hunter et al., 2011). It is also possible that the law enforcement officer becomes more aware of his/her own identity in relation to others, what may increase the focus on the self and not on the suspect. In turn, this may have a negative impact on the response that is being used (Nadler & Schnabel, 2015). It is however also possible that, for example, the presence of another interviewer or negotiator may relieve the stress of the law enforcement officer. That is because when an error is made and he/she does not know how to respond, the other officer can take over. In my studies, I focused on each party individually to be able to assess the communication behavior of each specifically without the interference of another person. Yet, it would be interesting to find out how the presence of other parties would influence the managing of errors.

Practical implications

Communication errors are part of everyday life and my thesis shows that law enforcement officers in that sense are no exception to this rule. Crisis negotiators primarily labelled errors as positive (a form of feedback) and opportunities from

which one can learn, and I believe that this is a fruitful approach. That is, it aligns with an error management orientation that has proven to be effective in other domains (Dimitrova et al., 2016). Yet law enforcement officers, especially suspect interviewers, should use this error management approach sparingly, because my error receiver studies show that errors can have a detrimental effect on the suspect's trust and rapport. Moreover, it is interesting to note that judgment errors more than factual errors appear to have the largest negative impact on the suspect, while factual errors have the largest negative impact on the law enforcement officer. It is important for law enforcement officers to realize this contrasting finding, as their response ultimately determines how an error is received. Enacting a response that aligns with the needs of the suspect is consequently much more important than aligning the response to the law enforcement officers' internal thoughts and feelings. When considering the error receiver's needs, my studies suggest that 'contradict' is not an effective response, while 'accept' is most effective in a suspect interview and 'apologize' in an expressive crisis negotiation. Both 'accept' and 'apologize' are founded on taking responsibility, so taking the blame may be considered an important first step towards reconciliation.

Next to a contribution concerning context, I deliver a practical contribution, as the exercises that I have used in my error sender studies can easily be integrated in crisis negotiation or suspect interview training. This has already proven to be successful in the past. Including error management in training of law enforcement officers is important because being able to flexibly adapt to unexpected situations is a prerequisite skill, as one cannot expose them to all the situations they are likely to encounter on their job in training. In addition, this exercise possibly decreases their experienced levels of stress on the job, as they feel more prepared for when unexpected situations occur. Reducing stress may be especially worthwhile for people in this type of jobs, since they already involve substantial levels of stress.

I did not assess the effect of errors that stayed unnoticed by the law enforcement officer but do get noticed by the suspect. Nonetheless, the general

negative impact of errors that result from my error receiver studies may strengthen the use of the already recommended strategy 'paraphrasing of the words of the suspect' during suspect interviews and crisis negotiations (Alison et al., 2014; Vecchi et al., 2005). When using this approach, law enforcement officers can directly check the facts and interpretations during the interaction and make sure that all errors are responded to appropriately.

I also found a positive effect of erring and denying any form of responsibility, as it appears to invite suspects to share more information. This raises a question about whether errors or denials could be used intentionally by law enforcement officers to make the other side talk. This may be an interesting avenue when the other side is not willing to talk at all. However, I am cautious in advising law enforcement officers to do this. Intentionally making an error or denying that you have said something in error can be seen as deception. Others have investigated what the impact of trickery and deceiving is and that this approach subsides with the acquisition of incorrect information and false confessions (for a review, see Kassin & Gudjonsson, 2004). I would therefore be hesitant to recommend taking this intentional deceptive route.

My studies also provide some implications for the future. The fast progress in modern technologies increases the chances of more and more law enforcement interactions being online. The use of online interaction media may, however, undermine a law enforcement officer's communication skill, as the mastered techniques are only effective in face-to-face interactions (McGin & Croson, 2004). This may address the need for law enforcement officers to receive specialized communication training in online settings. Communication error management may be a crucial component of this training, because my studies show that errors have a negative effect in an online setting if they are not appropriately responded to. Next to that, online communication coincides with additional complicating factors (e.g., a delay in the feedback time; cf. Koudenburg, Postmes, & Gordijn, 2013) that possibly increases the prevalence of errors and emphasizes the importance of recovery skills.

Epilogue

The aim of my thesis was not to provide a solution on how to deal with errors. Instead, I provided guidance on how errors should be understood in law enforcement interactions to come to faster solutions within these incidents. From an academic point of view, my studies can be considered the foundation from which to move forward from when considering errors in the law enforcement field, since they show the possible errors, response strategies and internal processes that are involved for both the error receiver and sender. In addition, the paradigms that are developed to assess communication error management in an interaction over time in diverse types of communication media can be used for future research in this and other domains.

From a practical point of view, these studies can be used to inform law enforcement officers of the consequences of their errors not only from their own perspective, but also from the perspective of the suspect. Moreover, the paradigms used in the field experiments can be used as a first or last step in training, as experiencing or experimenting with a specific situation that is of interest in the training is a prerequisite for developing skills (Kolb, 1981).

I would like to conclude with metaphorically describing the main finding of my thesis by simultaneously clarifying its title: Breaking (the) ice. When repairing your errors inappropriately, you can break ice, your errors become bigger, and, like an avalanche, you have no control over the situation. By contrast, when repairing your errors appropriately, you can break the ice like a snow shovel truck to open-up the conversation and create avenues for future interaction.

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Summary

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A range of studies in the Psychology and Law domain have assessed the relational dynamics between law enforcement officers and suspects in suspect interviews and crisis negotiations (e.g., Alison et al., 2013; Donohue & Roberto, 1993; Giebels & Taylor, 2009; Richardson et al., 2014). These studies predominantly focused on what should be said and done to create a trusting relationship and let the suspect cooperate. Yet, no study to date had considered what happens when a communication error is made in this process and how a law enforcement officer should then respond. Insight into this process is, however, important because these interactions involve high-stakes (i.e., finding the truth, peaceful resolution) and making errors can have a significant impact. Research in other domains shows that it is possible to mitigate the negative impact of errors when they are appropriately responded to (Benoit, 2013; Dutta & Pullig, 2011; Thoroughgood et al., 2013). My aim is, therefore, to 1) describe the type of communication errors made as well as the follow-up responses used by law enforcement officers, 2) understand the impact of communication errors on the suspect (the error receiver), but also on the law enforcement officers themselves (the error sender), and 3) determine the relative effectiveness of various kinds of responses.

In this thesis, I conceptualize the communication error management process as follows: the sending law enforcement officer utters a message; the receiving suspect judges the message to contain an error; the suspect (in) directly addresses the error; and, the law enforcement officer realizes the error and responds. I examine the perspective of both sender and receiver in two different types of interactions: instrumental suspect interviews and expressive crisis negotiations. I study these interactions because they allow an examination of law enforcement officers' communication behavior in contexts focused on information gathering and providing care and help (Beune et al., 2010; Hammer & Rogan, 1997; Vecchi et al., 2005). The thesis consists of three empirical chapters containing five studies that range from interviews to laboratory and field studies, using paradigms that involve online, telephone, and face-to-face interactions.

Since there was no domain-specific research to build on, I started by interviewing professional crisis negotiators about their experiences with communication errors, error responses and how they believed that errors affected the negotiation process (Chapter 2, $N = 11$). I found that negotiators reported making errors of three distinct types: factual, judgment or contextual. An error of fact occurs when a message contains information that is objectively wrong, such as the use of a wrong name or date. An error of judgment occurs when a message contains information that is subjectively wrong, such as the situation in which the law enforcement officer does not attune to the feelings of the suspect. An error of context occurs when a message fails to adhere to police practice or procedures, such as the use of police jargon. I also found that negotiators reported using four types of responses: accept (take responsibility and assure prevention), apologize (take responsibility), attribute (shift responsibility to a third party), and contradict (deny responsibility). Apologize was mentioned as the response that was most often used. The negotiators did not perceive communication errors as solely a negative event, since they also provide an opportunity for feedback. Consequently, they advocated for an error management approach in which errors were framed as opportunities from which a person can learn. These results provide some first empirical evidence for the type of errors that occur, response strategies that are being used, and highlight the notion that errors may have both positive and negative effects.

After I determined the type of errors that law enforcement officers make and responses that they enact, I tested in Chapter 3 the effects of these errors and responses on the error receiver. In two lab experiments, I explored the effect of errors and responses on 1) a suspect's trust in the officer, 2) established rapport and hostility, and 3) the amount and quality of information shared. Specifically, I focused on the impact of two types of errors (factual and judgment) and three types of responses (contradict, accept and apologize), and compared this to a control condition in which no error was made. I ignored context errors because for these errors the suspect is not the locus of control and my interest was the effect of a law enforcement officer taking (or not taking) responsibility. Students

were questioned online by an exam board member about a suspicion of exam fraud (Study 3.1, $N = 188$) or by a police negotiator after they had stolen money and barricaded themselves in a room (Study 3.2, $N = 184$). My findings show that the making of a judgment error in the follow-up communication lowered affective trust and rapport in a suspect interview, but not in a crisis negotiation. Remarkably, and in both situations, there was also a positive effect of errors in that it prompted suspects to provide more information.

Furthermore, particularly the way in which law enforcement officers responded determined the overall impact of errors, but these effects appeared to be partly context-specific. In both interactions, accept was effective in re-establishing rapport and decreasing hostility, while contradict endangered it. Yet, in a suspect interview, accept appeared most effective for reconciling the willingness to provide information, while in a crisis negotiation apologize appeared most effective for resolving affective trust and rapport. These results show that the consequences of making a communication error within law enforcement interactions can be both positive and negative, but is the following response of the law enforcement officer that determines the ultimate effect of the error.

After I assessed the effects of errors and responses on the receiver, I focused in Chapter 4 on the impact of errors on the error sender. I expected that making errors increases stress, distraction, and negative emotions (i.e., self-oriented anger, shame, and guilt), and that the enacted response would depend on the experienced levels of cognition and affect. Specifically, I expected the impact of judgment errors to be largest, as I had also found this in the receiver studies in Chapter 3. Dutch police and probation officers participated in a crisis negotiation training exercise that involved a barricaded suicidal person (Study 4.1, $N = 133$) or a suspect interview exercise with a person who was suspected of stealing money (Study 4.2, $N = 68$). Their preparation material led them to make a factual or judgment error during dialogue and I compared these to a control condition in which no error was made. In both settings, I found that making errors increased negative affect. In contrast to what I expected, the effect of a factual error appeared more severe than of a judgment error. That is, factual errors

distracted more than a judgment error in a crisis negotiation and led to more negative affect in a suspect interview. After analyzing the transcribed dialogues, I could identify four types of responses: apologize, exploration (form of accept), deflect (form of contradict), and no-alignment. Of these, negotiators used all four strategies, while suspect interviewers predominantly used exploration and deflect. As predicted, the use of a response strategy was associated with cognition and affect, but I found this effect only for the negotiators and not for the interviewers. That is, the more stress experienced and the less distraction, the more negotiators used apologize. The less negotiators experienced stress the more they used exploration, and the less they experienced negative affect the more they used deflect. These results show that the making of a factual error has a larger impact on the error maker than a judgment error. Besides, the use of the response is driven by different internal processes of the law enforcement officer in crisis negotiations, but not in suspect interviews.

All in all, the studies of this thesis show that the consequences of making a communication error within law enforcement interactions can be both positive and negative. Yet, it clearly is the follow-up response of the law enforcement officer that determines the ultimate effect of the error. The choice of the response appears to be driven by different internal processes of the law enforcement officer (at least of crisis negotiations), while the internal processes of the suspect ultimately explain how an error is received. Consequently, my studies underline the notion that erring within an interaction can only be understood when considering both parties. From an academic perspective, these studies can be considered a foundation from which to move forward from when considering communication error management in law enforcement interactions and other settings (e.g., leader-employee interactions, victim-offender mediations, pilot to tower conversations). From a practical perspective, these studies can be used to enlighten law enforcement officers of the consequences of their errors not only from their own perspective, but also how they influence the suspect. The paradigms used in these experiments can be easily used in training to let them experience the situation themselves.

Samenvatting

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In diverse psychologische en juridische studies is gekeken naar de dynamische relatie tussen wetshandhavers en verdachten in politieverhoren en crisisonderhandelingen (bijv. Alison et al., 2013; Donohue & Roberto, 1993; Giebels & Taylor, 2009; Richardson et al., 2014). Deze studies hebben voornamelijk gekeken naar wat er nodig is om een vertrouwensband op te bouwen en de verdachte te laten meewerken. Tot op heden is er in geen enkel onderzoek gekeken naar wat er gebeurt als er een communicatiefout wordt gemaakt in dit proces en hoe een wetshandhaver dan zou moeten reageren. Inzicht in dit proces is echter wel van belang, want er staat veel op het spel (nl. het vinden van de waarheid of het komen tot een vreedzame oplossing). Deze fouten kunnen dus verstrekkende gevolgen hebben. Onderzoek op ander gebied laat zien dat het mogelijk is om deze negatieve gevolgen af te zwakken, mits hier gepast op wordt gereageerd (Benoit, 2013; Dutta & Pullig, 2011; Thoroughgood et al., 2013). Mijn doel is daarom om 1) de communicatiefouten plus reactie van de wetshandhaver te beschrijven, 2) de impact van communicatiefouten op de verdachte (foutenontvanger) en wetshandhaver (foutenzender) te begrijpen, en 3) de relatieve effectiviteit van verschillende reacties vast te stellen.

In dit proefschrift definieer ik het communicatiefoutenmanagementproces als volgt: de wetshandhaver zendt een boodschap; de verdachte beoordeelt deze boodschap als foutief; de verdachte adresseert deze fout (in)direct; en de wetshandhaver wordt zich bewust van de fout die hij/zij gemaakt heeft en reageert daarop. Ik bestudeer het perspectief van zowel zender als ontvanger in twee verschillende gesprekken: instrumentele verdachtenverhoren en expressieve crisisonderhandelingen. Ik analyseer specifiek deze gesprekken, omdat ik zo het communicatiegedrag van wetshandhavers kan bestuderen in een context, waarin zij zich richten op het verzamelen van informatie en het verlenen van hulp (Beune et al., 2010; Hammer & Rogan, 1997; Vecchi et al., 2005). Het proefschrift bestaat uit drie empirische hoofdstukken met daarin vijf studies die variëren van interviews tot laboratorium- en veldstudies, waarbij gebruik wordt

gemaakt van paradigma's in online, telefonische en face-to-face interacties.

Aangezien er geen domeinspecifiek onderzoek beschikbaar was waarop ik kon voortborduren, ben ik begonnen met het interviewen van professionele crisisonderhandelaren over hun ervaringen met communicatiefouten, reacties op communicatiefouten en hoe zij dachten dat fouten het onderhandelingsproces beïnvloeden (Hoofdstuk 2, $N = 11$). De onderhandelaars rapporteerden drie soorten fouten: feitelijke, inschattings- en contextuele fouten. Een feitelijke fout ontstaat wanneer een bericht informatie bevat die objectief gezien fout is, zoals het gebruik van een verkeerde naam of datum. Een inschattingsfout ontstaat wanneer een bericht informatie bevat die subjectief gezien fout is, zoals een situatie waarin een wetshandhaver niet aansluit bij de gevoelens van verdachte. Een contextuele fout ontstaat wanneer een bericht niet aansluit bij de politiepraktijk of procedures (te denken valt aan politiejargon). Ook werd duidelijk dat onderhandelaars vier soorten reacties zeggen te gebruiken: accepteren (verantwoordelijkheid nemen en verzekeren dat het niet weer zal gebeuren), verontschuldigen (verantwoordelijkheid nemen), afschuiven (verantwoordelijkheid afschuiven naar een derde partij) en ontkennen (verantwoordelijkheid ontkennen). Verontschuldigen werd genoemd als de meest gebruikte reactie. De onderhandelaars zagen communicatiefouten niet alleen als een negatieve gebeurtenis, maar ook als een mogelijkheid voor feedback. Daarom pleitten ze voor een aanpak waarbij fouten worden beoordeeld als gebeurtenissen waar men van kan leren (foutenmanagement). Deze resultaten leveren het eerste empirisch bewijs voor het soort fouten dat voorkomt, herstelstrategieën die gebruikt worden en benadrukt het idee dat fouten zowel positieve als negatieve gevolgen kunnen hebben.

Nadat ik heb vastgesteld welke fouten wetshandhavers maken en de reacties daarop, richt ik mij in Hoofdstuk 3 op de effecten van deze fouten en reacties op de foutenontvanger. In twee laboratoriumexperimenten heb ik onderzocht wat het effect van fouten en reacties is op 1) het vertrouwen van verdachte in de handhaver, 2) de ontstane werkrelatie en vijandigheid en 3) de hoeveelheid en kwaliteit van de gedeelde informatie. Ik heb me specifiek

gericht op de impact van twee soorten fouten (feitelijke en inschattings-) en drie soorten reacties (ontkennen, accepteren en verontschuldigen) en heb dit vergeleken met een controleconditie waarin geen fout werd gemaakt. Ik heb niet gekeken naar contextuele fouten, omdat het hierbij gaat over iets waar de verdachte geen controle over heeft en bovendien was ik vooral geïnteresseerd in het effect van wel (of niet) verantwoordelijkheid nemen door een wetshandhaver. Studenten werden online ondervraagd door een lid van de examencommissie over een verdenking van examenfraude (Studie 3.1, $N = 188$) of door een politieonderhandelaar nadat zij geld hadden gestolen en zichzelf hadden opgesloten in een kamer (Studie 3.2, $N = 184$). Mijn resultaten laten zien dat het maken van een inschattingsfout in de daaropvolgende communicatie het affectieve vertrouwen en de werkrelatie negatief beïnvloedt in een verdachtenverhoor, maar niet in een crisisonderhandeling. Opmerkelijk genoeg was er een positief effect van fouten waarneembaar in beide contexten, aangezien het verdachten aanzette tot het verschaffen van meer informatie.

Bovendien leidt de daaropvolgende reactie van de wetshandhaver tot het uiteindelijke effect van fouten, maar dit effect blijkt specifiek voor de context te zijn. In beide interacties was 'accepteren' effectief in het herstellen van de werkrelatie en het verminderen van vijandigheid, terwijl 'ontkennen' dit bedreigde. In een verdachtenverhoor was echter 'accepteren' het meest effectief voor het herstellen van de bereidheid tot het verschaffen van informatie, terwijl in een crisisonderhandeling 'verontschuldigen' het meest effectief was voor het herstellen van het affectieve vertrouwen en de werkrelatie. Deze resultaten laten zien dat de consequenties van het maken van een communicatiefout binnen een wetshandavingsgesprek zowel positief als negatief kunnen zijn, maar de daaropvolgende reactie van de wetshandhaver het uiteindelijke effect van de fout bepaalt.

Nadat ik de effecten van fouten en reacties op de ontvanger heb onderzocht, richt ik mij in Hoofdstuk 4 op de impact van fouten op de foutenzender. Ik verwachtte dat het maken van fouten leidde tot meer stress, afleiding en negatieve emoties (nl. boosheid op jezelf, schaamte en schuld) en dat de

daaropvolgende reactie afhankelijk was van deze cognitieve en affectieve reacties. Daarnaast had ik verwacht dat voornamelijk de impact van inschattingfouten het grootst was, omdat ik dit ook bleek in de ontvangerstudies in Hoofdstuk 3. Nederlandse politie- en gevangenismedewerkers hebben deelgenomen aan een crisisonderhandelingstrainingsoefening met een gebarricadeerde suïcidale persoon (Studie 4.1, $N = 133$) of een verdachtenverhooroefening met een persoon die verdacht werd van het stelen van geld (Studie 4.2, $N = 68$). Hun voorinformatie leidde ertoe dat ze een feitelijke of inschattingfout maakten tijdens het gesprek en ik heb dit vergeleken met een controleconditie waarin geen fout werd gemaakt. In beide contexten vond ik dat het maken van fouten leidde tot meer negatieve emoties. In tegenstelling tot wat ik had verwacht, was het effect van een feitelijke fout groter dan dat van een inschattingfout. Oftewel, feitelijke fouten leiden tot meer afleiding in een crisisonderhandeling en tot meer negatieve emoties in een verdachtenverhoor. Na de transcripten van de gesprekken te hebben geanalyseerd, kon ik vier typen reacties onderscheiden: verontschuldigen, verkennen (vorm van accepteren), afschuiven (vorm van ontkennen) en niet-aansluiten. Onderhandelaars gebruikten elk van deze vier strategieën, terwijl verdachtenverhoorders voornamelijk 'verkennen' en 'afschuiven' gebruikten. Zoals voorspeld hing deze strategie samen met cognitie en affect, maar ik vond dit effect alleen voor onderhandelaars en niet voor verhoorders. Dat betekent dus hoe meer gestrest en hoe minder afgeleid de onderhandelaars waren, hoe meer ze zich verontschuldigden. Hoe minder gestrest de onderhandelaars waren, hoe meer ze gingen verkennen en hoe minder negatieve emoties ze ervoeren, hoe meer ze gingen afschuiven. Deze resultaten laten zien dat het maken van een feitelijke fout een grotere impact heeft op de foutenzender dan een inschattingfout. Daarnaast wordt de reactie veroorzaakt door verschillende psychologische processen van de wetshandhaver in crisisonderhandelingen, maar niet in verdachtenverhooren.

Samenvattend laten de studies in dit proefschrift zien dat de gevolgen van het maken van een communicatiefout in wetshandavingsgesprekken zowel positief als negatief kunnen uitpakken. Het is echter de daaropvolgende reactie van de

wetshandhaver die het uiteindelijke effect van de fout bepaalt. De keuze van deze reactie lijkt gedreven door verschillende psychologische processen van de wetshandhaver (althans in crisisonderhandelingen), terwijl de psychologische processen van de verdachte uiteindelijk bepalen hoe een fout wordt ontvangen. Mijn studies laten dus zien dat het maken van communicatiefouten in een gesprek alleen kan worden begrepen wanneer naar beide gesprekspartners wordt gekeken. Vanuit academisch oogpunt kunnen deze studies worden gezien als basis waarop men kan voortborduren wanneer er wordt gekeken naar communicatiefoutenmanagement in wetshandhavings- en andersoortige gesprekken (zoals leidinggevende-medewerker besprekingen, slachtoffer-dader gesprekken en piloot-luchtverkeersleiding interacties). In de praktijk kunnen deze studies gebruikt worden om wetshandhavers inzicht te verschaffen in de gevolgen van hun fouten, maar ook hoe deze fouten de verdachte beïnvloeden. De paradigma's gebruikt in mijn experimenten kunnen eenvoudig worden toegevoegd aan hun training, zodat ze zelf deze situatie kunnen ervaren.

Acknowledgements

Acknowledgements

‘Meneer, meneer, kunt u alstublieft gaan zitten!’ zei ik in mijn rol als rechercheur. ‘Hoezo meneer, ik ben een vrouw!’ antwoordde de discotheekeigenaar, gespeeld door een acteur, geïrriteerd terug. Wat ik daarna zei om deze feitelijke fout - zo weet ik nu - te herstellen, kan ik me slecht herinneren. Deze miscommunicatie in het rollenspel tijdens de selectie tot recherchekundige in 2012 staat echter in mijn geheugen gegrift. Wie had ooit gedacht dat ik zo’n zes jaar later zou promoveren op precies dit fenomeen? Ik in ieder geval niet! Wel weet ik dat ik dit niet alleen had gekund, dus daarom wil ik deze ruimte gebruiken om verschillende mensen te bedanken.

Allereerst natuurlijk mijn begeleiders: Ellen en Paul. Ellen, ik heb al eerder de eer gehad om zo’n 2000 woorden te wijden aan hoe jouw werk mij heeft geïnspireerd (Oostinga, Rispens, Taylor, & Ufkes, accepted). Daar wil ik nog graag drie dingen aan toevoegen. Allereerst de zin: ‘ik ken wel iemand die...’ Ik geloof dat deze zin in zeker de helft van onze gesprekken, al dan niet meer, door jou werd uitgesproken. Zonder jouw connecties was ik echt nooit zo ver gekomen. Daarnaast jouw oog voor detail. Ik vind het indrukwekkend hoe je let op zowel de grote lijnen als de punten en komma’s (letterlijk). Zeker dit laatste doet mijn perfectionistische hart sneller slaan. Tot slot wil ik je bedanken voor je persoonlijke aanpak. Ik kon je altijd bereiken, zelfs tijdens je sabbatical, en je nam altijd de tijd voor mij. Ook de nadruk die jij legde op het belang van vakantie (‘Één week is geen vakantie hé?’) heeft mij gestimuleerd om beter voor mijzelf te zorgen. Ik hoop dat we in de toekomst nog veel mogen samenwerken en ik mag genieten van jouw visie op de academische wereld.

Paul, it was an honor to work with you. I would like to mention three things that directly stood out in my memory. Firstly, your writing skill. To my fellow colleagues I always described it as some form of ‘gift-wrapping’. I send a first draft to you, you start to craft it, wrap a paper around it and finish it off with a golden ribbon. What you can do with words is just incredible. Secondly, is the proudness that I felt the moment you received the mid-career award (or in my

words - midlife career award, sorry about that!) at the EAPL 2017. It was great to see your humbleness when receiving this more than deserved award and be there to congratulate you. Lastly, I would like to thank you for your faith in me as a presenter. It was a privilege to join you on two trips to Washington to show our work to fellow researchers and our funder. You introduced me to this network of people who do marvelous work. This has given me the energy to continue our work throughout my PhD and finish it in the end. Just like I said with Ellen, I hope this is just the beginning of our collaboration.

To go back to the start of my PhD. The idea of studying errors in law enforcement interactions was the result of a simple question that was raised by Simon Wells, a professional crisis negotiator in the United Kingdom. I would like to thank him (and Paul Taylor) for sharing this question with me, as without this question I would not have started my PhD in this direction in the first place.

Ik wil graag alle mensen uit de praktijk bedanken die ik heb ontmoet tijdens mijn studies en degenen die hebben deelgenomen aan mijn studies. In jullie bijzijn werd ik me meer en meer bewust van het feit dat jullie in je rol als politieman of penitentiaire inrichtingsmedewerker dagelijks worden geconfronteerd met situaties waarin veel op het spel staat. Zo zal ik de volgende momenten nooit vergeten: de crisisonderhandelaar die werd opgeroepen voor een incident terwijl we bezig waren met de afronding van mijn interview, de inrichtingsonderhandelaar die mij door een PI rondleidde waardoor ik een betere indruk kreeg van het onderhandelen in de PI – een vak apart, of de presentaties van de slachtoffers van een gijzeling en ontvoering. Ik heb zoveel van jullie mogen leren, doordat jullie je persoonlijke verhalen en ervaringen met mij deelden. Bedankt voor het vertrouwen. In het bijzonder, wil ik Peter, Willem, Michiel, Frans, Jessica, Christina, Iskander, Briska Smit, Frans Bominar, Eltjo Herder en de mannen van de TD van de politieacademie in Ossendrecht bedanken. Jullie hebben mij zo ontzettend geholpen tijdens mijn studies. Meer nog dan ik van tevoren had kunnen dromen.

I would like to thank the High-Value Detainee Interrogation Group for funding my project and the BMS lab powered by Tech4people for their support. Next to

that, my gratitude goes to the members of my committee for the time they have spent on reading my thesis. Moreover, I would like to thank the people that I have met during my KLI courses, and the EAPL and HIG conferences that I have visited. Your feedback has advanced my work incredibly.

Ik wil graag de studenten die ik heb mogen begeleiden door de jaren heen bedanken: Angelique Haghuis, Juliette Laseur, Femke van Statum, Caroline Lennecke, Sven Prins en Roselle Jansen. Zonder jullie was de dataverzameling en het coderen nooit gelukt.

Dan mijn collega's. Wauw, wat ga ik jullie allemaal missen. Ik heb altijd met groot plezier gewerkt bij PCRV en ik hoop dat deze goede werksfeer waar ruimte is voor gesprekken over diepgaande academische onderwerpen, je passie voor oppervlakkige series en je bezorgdheid om de behoeften van eendagsvliegen voor altijd zal blijven bestaan. Ik wil graag mijn kamergenoten in het bijzonder bedanken. Anna en Pauline, jullie waren er in de tijd voor mijn promotie en hebben mij geholpen om mee te denken aan een mooi onderzoeksvorstel. Stijn, je hebt mij zowel inhoudelijk als privé geholpen dit traject door te komen. Je hebt belangrijke 'scriptjes' voor me geschreven in R en we hebben veel onnuttige onderwerpen samen kunnen bespreken. Voor het geval je het nog niet door had: ik houd echt van jouw humor. Hossein, it was great fun to be your roommate. You have taught me a lot about your culture and what it is like to work in different countries. Besides, you have ruined me completely. I do not think I will ever enjoy a simple cup of coffee or tea anymore. No, I am kidding, I am very grateful that you have let me experience this route of good Oolong tea (amongst others). Ik wil Lennart graag bedanken voor zijn inspirerende focus wanneer je naast mij aan het werk was. Ik hoop dat ik je niet te veel heb gestoord met mijn behoefte om jou van koffie te voorzien. Tot slot natuurlijk Janneke. Ik vond het erg leuk om van dichtbij een kijkje te mogen nemen in de dynamische keuken van het onderwijs waar duidelijk jouw passie ligt. Daarnaast hoop ik dat de belangrijke traditie met onze burens zal blijven voortbestaan.

Ik wil graag mijn mede-PhD-studenten bedanken: Sabine, Marjan, Miriam,

Marije, Femke, Wendy, wederom Lennart en Stijn en Lisanne. Het was fijn om altijd even te kunnen klagen over het (PhD) leven om vervolgens weer vol goede moed aan de slag te gaan. De sinterklaasavonden, escape rooms, weekendjes weg en de mooie reis naar Napels waren voor mij echt de broodnodige ontspanning. Ook de stafleden wil ik niet ongenoemd laten. Margôt, Peter, Sven en Mariëlle, jullie hebben me veel geïnspireerd op het gebied van onderzoek, geholpen met moeilijke analyses en waren ook altijd te porren voor een koffietje of borrel (wat later op de middag). Mijn treinmaatje Elze. Ik heb genoten van onze gesprekken in de trein die qua onderwerp wisselden van onderzoek tot bruiloften en reizen tot goede boeken. Daarnaast heb ik veel van je mogen leren toen ik onder jouw begeleiding mocht lesgeven bij GDI. Bedankt voor je vertrouwen. Ik wil ook graag Marco bedanken. Hoe vaak ik niet jouw kamer kwam binnenvallen met vragen over mijn experiment, de Empatica E4 of het betrouwbaarheidsinterval van de Cohen's d . Bedankt voor alle moeite die je hebt gedaan om het antwoord op al deze vragen te vinden. Daarnaast denk ik dat ik het niet had gered zonder onze muziekljsten.

Dan de mensen uit mijn privé. Carry, door jou heb ik mijn focus weer teruggevonden en heb ik echt kunnen genieten van het feit dat ik op zulke mooie plekken kwam. Guadalupe, your mental support was very important to me, so yes, that blank page is especially for you. De CODA-meiden, bedankt dat jullie wilden luisteren naar mijn verhaal. Viviana, Vreneli en Johanneke, ik hoop dat ik niet al te veel heb geklaagd over mijn 'zware leven'. Fran, Manon en Anne, bedankt voor jullie support en afleiding; jullie waren er echt voor me. Rick, ook al was je geografisch gezien vaak ver weg, stiekem was je er altijd bij. Mijn paranimfjes Irma en Wendy. Het is een eer dat jullie naast mij staan en mij zo onwijs veel hebben geholpen bij deze mijlpaal in mijn leven. Tot slot, wil ik ook mijn familie bedanken. Papa, je hebt me altijd gestimuleerd om grootser te denken, planningen te halen en met creatieve oplossingen te komen. Mama, hoe vaak ik jou niet in paniek heb opgebeld, want ik had ergens een fout ontdekt. Hoezo zou ik zelf ook een foutenmanagementstrategie toepassen? Ook heb ik ergens medelijden met je, want hoe kom ik er ook bij

om aan een uitgesproken alfa statistische berekeningen uit te leggen? Bedankt voor al het geduld en jouw eeuwige vertrouwen in mij. Natuurlijk mijn broers, Ruben en David. Afgelopen jaren blijkt maar weer dat wij aparte schepsels zijn en alle drie heel verschillende richtingen hebben gekozen. Gelukkig is er altijd interesse en respect voor elkaar en ik hoop dat dit voor altijd zo zal blijven.

Miriam

PS: After I heard that this acknowledgement paragraph is the most-read part of all theses, I started thinking about an intervention. I will not fool myself and believe that I will be able to convince you all to read it word-by-word. Yet, I may be able to let you browse through it. Therefore, I have hidden my favorite animal somewhere within this thesis. The reward? You may stumble across something interesting that may help you now or in the future. Because let us be realistic:

We are all human, so we err.

Curriculum Vitae

Curriculum Vitae

Miriam Oostinga (1991) has a bachelor's in Criminology from the VU University Amsterdam and a master in Investigative Psychology from the University of Huddersfield, UK (cum laude). She has a broad interest in crime in general and psychology-related research in particular. Since 2012, she has worked as a researcher on different projects that focused on human trafficking, the effects of imprisonment, and the influence of culture on crisis negotiations. In 2014, Miriam started her PhD project at the University of Twente under the supervision of Prof. dr. Ellen Giebels and Prof. dr. Paul Taylor. In her PhD she assessed communication error management in both suspect interviews and crisis negotiations. Miriam currently works as a scientific collaborator at the Ministry of Justice and Security in which she focuses on police research from a policy-angle. Over the past few years she has realized that the bridge between science, policy and practice is very important to make. Therefore, she has presented her work at a wide variety of places in which policy-makers and practitioners can be reached, e.g., the High-Value Detainee Interrogation Group research meetings in the United States. (2016-2017) and the European Association of Psychology and Law conferences in Europe (2015-2017). Besides, she was invited to speak at the Ministry of Security and Justice, the Custodial Institutions Agency and the police in the Netherlands.



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- Oostinga, M. S. D., Giebels, E., & Taylor, P. J. (under review). Communication error management in law enforcement interactions: A sender's perspective.
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For a complete publication list, please visit:
www.miriamooostinga.com/publications.

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Over the last two decades the focus of research has been on what should be said and done in suspect interviews and crisis negotiations to make the suspect cooperate. Less is known, however, about what happens when a law enforcement officer says something in error.

The goal of this doctoral thesis is, therefore, to 1) describe the type of errors made as well as the follow-up responses used by law enforcement officers, 2) understand the impact of errors on the suspect (the error receiver), but also on the law enforcement officers themselves (the error sender), and 3) determine the relative effectiveness of various kinds of responses. By doing this, this thesis creates the groundwork for error research within this and related domains on which future research can build. Next to that, this research can be used by practitioners to provide some initial guidance for when this situation occurs.

Overall, communication errors appear to have positive and negative effects, but it is the following response that may incline law enforcement officers to break (the) ice.



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