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## **Emotions in negotiations. The role of communicated anger and disappointment**

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# Chapter 6

## *General Discussion*

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## Chapter 6

The aim of this dissertation was to gain knowledge about the interpersonal effects of two of the most often expressed emotions: anger and disappointment (Van Dijk & Zeelenberg, 2002b). The similarities and differences between the effects of both emotions were examined, and the results showed under which conditions and for what reasons communicating anger and/or disappointment helps or hurts in negotiations. Over the course of several behavioral studies and one neuroimaging study, using different negotiation paradigms and different emotion manipulations, the findings presented in this dissertation provide insight in the distinct effects of communicating anger and disappointment in negotiations.

In this final chapter, I summarize the results of the four empirical chapters. Furthermore, I discuss how the results contribute to existing social functional analyses of emotions. Finally, I give suggestions for future research.

### Summary of the empirical findings

In the first empirical chapter (Chapter 2), it was investigated when anger and disappointment change bargaining behavior via reciprocal or complementary emotions. As expected, power was a key determinant. When a high-power bargainer communicated anger, the complementary emotion fear was evoked, which led opponents to make higher offers. When it was communicated by a low-power bargainer, anger was reciprocated, which led opponents to make lower offers. Communicating disappointment, however, always evoked the complementary emotion guilt and increased offers, regardless of the bargainer's power position. Although both emotions elicited generous offers when they were communicated by high-power bargainers (but for different reasons), disappointment was more advantageous than anger, when communicated by low-power bargainers.

In Chapter 3, I continued to study how anger and disappointment affect bargaining behavior by considering underlying neural mechanisms. Moreover, the effects of the communication of these emotions were compared to the effects of the communication of the positive emotion happiness. The results showed that bargainers more often made lower offers to angry opponents than to happy or disappointed opponents. With regard to the underlying neural mechanisms, the results showed increased activation in the

temporoparietal junction (TPJ) for receiving happy reactions, in comparison to receiving angry or disappointed reactions. In prior studies TPJ has been associated with a variety of social cognitive tasks such as perspective-taking (Ruby & Decety, 2003), action understanding (Kret, Pichon, Grèzes, & De Gelder, 2011; Samson, Apperly, Chiavarino, & Humphreys, 2004) and empathy (Lamm, Batson, & Decety, 2007). It is possible that the recipient's happiness encouraged participants to take the perspective of the recipient. This is in line with behavioral research that showed that happiness leads to more closeness and increased perspective taking (Frantz & Janoff-Bulman, 2000; Fredrickson, 1998). The difference in neural reactions to anger and disappointment was also investigated. Compared to disappointment, expressions of anger increased activation in the MPFC. In previous research this region has been implicated in strategic bargaining (i.e., maximizing own outcomes and defecting in a trust game, see Van den Bos, Van Dijk, Westenberg, Rombouts, & Crone, 2009, 2011) and, more broadly, in self-referential thinking. This is in line with the behavioral results that showed that bargainers with angry opponents more often made self-serving offers and maximized their own outcomes.

Whereas the first two empirical chapters thus showed that communicating disappointment in negotiations is more advantageous than communicating anger, in Chapter 4 I addressed the question of whether disappointment would always yield higher outcomes than anger. The findings showed that the interpersonal effects of anger and disappointment depend critically on the target of the emotion, that is, whether they are directed at the person or at the offer. Anger pays when it is directed at the offer, but disappointment pays when it is directed at the person. Offer-directed anger elicited higher offers than person-directed anger, because people inferred higher limits from opponents who communicated offer-directed anger. Person-directed disappointment elicited higher offers in others than offer-directed disappointment, because it evoked higher feelings of guilt.

Chapter 5 completes the analyses of anger and disappointment. In this chapter it is argued that disappointment communicates a sense of dependency and weakness that is less present in anger. I then propose that this weakness has benefits and downsides depending on whether disappointment evokes guilt or not. When disappointment evokes guilt, the communicated weakness elicits a prosocial tendency. When it does not evoke guilt, disappointment elicits a selfish tendency. Key determinants of whether or not disappointment evokes guilt are the group membership of the expresser and the type of

negotiation. When disappointment is communicated by an out-group member or in a representative negotiation, it evokes lower levels of guilt in people, which lead them to make lower offers. When disappointment is communicated by an in-group member or in an individual negotiation, it evokes higher levels of guilt in people, which lead them to make higher offers.

## **Anger and disappointment: similarities and differences**

The results of the four empirical chapters provide new insights into the similarities and differences between the interpersonal effects of anger and disappointment. Below, I first discuss these similarities and differences between anger and disappointment and then discuss what the implications are for opponents in negotiations.

### **Similarities between anger and disappointment**

At first sight, anger and disappointment are two very similar emotions. Indeed, both emotions are considered to be negative emotions and reactions to undesirable outcomes (Frijda, Kuipers, & Ter Schure, 1989). With regard to the interpersonal effects of anger and disappointment, both emotions communicate an undesirable outcome and a desire for behavioral change in the other person. They both signal that a wrong has been done by the target of the emotions, to the expresser or to someone else (Wubben, De Cremer, & Van Dijk, 2011). Anger and disappointment are also perceived as possessing similar levels of intensity and appropriateness in bargaining situations (see also Wubben, De Cremer, & Van Dijk, 2009). Finally, this dissertation also shows that, compared to communications of happiness, there was reduced activation in the TPJ for targets of communications of anger and disappointment. As noted above, in prior studies this region was associated with perspective-taking (Ruby & Decety, 2003), and empathy (Lamm et al., 2007).

These findings seem to be in contrast to the findings of the other chapters in this dissertation. Communications of disappointment elicit high offers from others when these others feel guilty. As noted in Chapter 5, guilt has been shown to be linked to perspective taking and empathy, such that people feel guiltier towards another person when they want or are able to take the perspective of the other and when they empathize more with the other (Leith & Baumeister, 1998; Tangney & Dearing, 2002). So why do the findings of Chapter 3 show reduced activation for targets of disappointment in an area associated

with perspective taking and empathy? Although it is certainly possible that the reduced TPJ activation in the participants can be interpreted as reduced perspective taking, I want to stress that this need not be the case. fMRI is a relatively new technique and it is still hard to interpret what it means if a certain brain region is activated during behavior of participants. Regions that are activated may represent a number of different functions and it is hard to tell exactly what process is responsible for the behavior that people show in the scanner. In Chapter 3 there were no behavioral data to support the claim that the reduced TPJ activation represents reduced perspective taking. The TPJ has been implicated in other processes as well, which could lead to other interpretations of the TPJ activation. The TPJ, for instance, has also been implicated in action understanding (Kret et al., 2011; Samson et al., 2004). In Chapter 3 the emotional expressions were reactions to a 6-4 offer in favor of the participant (the target of the emotion). Participants thus received happy, angry, and disappointed reactions to self-serving offers that they made. It is therefore also possible that the reduced activation in the TPJ for communications of anger and disappointment, compared to communications of happiness, implies that angry or disappointed reactions were less confusing than happy reactions. It could be that it was more unclear for targets why people would be happy about receiving less than half of the money than why people would be angry or disappointed. Future research could investigate how this TPJ activation should be interpreted.

Based on these insights, one may erroneously conclude that anger and disappointment have similar effects on others. However, as the findings of the four empirical chapters of this dissertation show, anger and disappointment are two very distinct emotions, with different effects on others.

### **Differences between anger and disappointment**

The most important difference between the interpersonal effects of anger and disappointment is the communicated strength/weakness of the emotions. The findings presented in this dissertation, but also in previous work (Tiedens, 2001), have shown that anger communicates strength. In negotiations, it communicates toughness and high limits (Sinaceur & Tiedens, 2006; Van Kleef, De Dreu, & Manstead, 2004a, b), which are indications of strength. By communicating toughness and high limits, anger forces opponents to give in. Anger entails a threat (Sinaceur, Van Kleef, Neale, Adam, & Haag, 2011; Van Dijk, Van Kleef, Steinel, & Van Beest, 2008) and, as a result, it can evoke fear in

others. Because anger communicates power, it can thus elicit high offers from others in negotiations.

This dissertation shows that anger can also backfire, such that it elicits low offers from opponents. When angry bargainers have low power, opponents do not have to care about the communicated anger or implied threat (Van Dijk et al., 2008). In this case anger does not elicit high offers. This dissertation also showed that in this situation (i.e., when bargainers communicating anger have low power), anger activated regions in the MPFC in others, which is associated with self-referential thinking and the maximization of own outcomes. Observers of anger are thus more concerned with their own outcomes, and only offer more in situations when they have to be careful about the communicated power/high limits (i.e., in situations where bargainers who communicate anger have high power). Finally, the communication of anger backfires when the information about the power and high limits does not come across. In line with previous research (Steinel, Van Kleef, & Harinck, 2008), the findings of this dissertation show that when anger is directed at the person, it is less informative about one's limits and is thus less seen as an indication of power. As a result, angry bargainers are not perceived to be powerful and communicating anger may elicit lower offers.

Disappointment does not typically communicate a sense of toughness. It communicates dependency (Eisenberg, 2000) and a call for help (Clark, Pataki, & Carver, 1996; Timmers, Fischer, & Manstead, 1998; Van Kleef, De Dreu, & Manstead, 2006a), which are indications of weakness. This dissertation indeed shows that disappointment communicates weakness, which can have benefits and downsides, depending on whether it evokes guilt or not. When disappointment evokes guilt, the communicated weakness evokes a tendency to act prosocially, which is reflected in higher offers. When disappointment does not evoke guilt, the communicated weakness evokes a tendency to act in a self-interested manner, which is reflected in lower offers.

To conclude, by communicating power and high limits, anger may thus pay, because it alerts opponents to negative consequences (e.g., conflict escalation and impasse). When opponents do not have to care about these negative consequences (when anger is communicated by a low-power bargainer) or when the information about the high limits is not communicated in the right way (when it is directed at the person), anger may backfire. In contrast, by communicating weakness, disappointment may pay when it evokes guilt, because then it can elicit a prosocial reaction. However, when disappointment

does not evoke guilt, this communicated weakness backfires and elicits a tendency to act in a self-interested way. When disappointment is communicated by an out-group member or in a representative negotiation, targets do not feel guilty. In these situations, disappointment elicit low offers. This dissertation thus not only shows that the interpersonal effects of anger and disappointment differ, but also why this is the case and under what conditions.

The most important difference between anger and disappointment is thus that whereas anger communicates power, disappointment seems to communicate weakness. In the negotiation literature there is a common belief that weakness is a liability in negotiations (De Dreu, 1995; Güth & Huck, 1997; Kagel, Kim, & Moser, 1996; Lawler, 2002; Pillutla & Murnighan, 1995; Suleiman, 1996). Whereas previous findings have indeed shown that it is advantageous to express emotions that communicate power (Sinaceur & Tiedens, 2006; Van Kleef et al., 2004a, b), under particular circumstances it can be (more) effective to express emotions that communicate weakness.

## **General implications**

The present dissertation demonstrates that two of the most often expressed emotions in negotiations, anger and disappointment, have distinct social functions and affect the behavior, thoughts, beliefs and emotions of others differently. The findings presented in this dissertation increase our understanding of the social functions of emotions and extend previous social functional accounts of emotions. Below I address the implications of the work presented in this dissertation for social functional accounts of emotions (specifically for the Emotion as Social Information model), and some of the more general contributions.

## **Correspondence with and extension of social functional accounts of emotion**

As explained in Chapter 1, the findings in this dissertation correspond with, but also extend social functional accounts of emotion. Below I will first explain how the findings presented in this dissertation correspond with social functional analyses and after that I will explain how the findings extend current social function analyses of emotion. I focus on a dominant social functional account of emotions: the Emotion as Social

Information (EASI) model by Van Kleef, De Dreu, and Manstead (2010; see also Van Kleef, 2009; Van Kleef, Van Doorn, Heerdink, & Koning, 2011).

### **Correspondence with the EASI model**

According to the EASI model emotions can affect others via inferential as well as affective reactions. Emotions contain crucial information about the feelings and intentions of the sender of the emotion, which can have consequences for the behavior of receivers of the emotion. People may thus infer important information from emotional expressions of others (Keltner & Haidt, 1999; Van Kleef, 2009). In addition to providing relevant information, emotions can also wield interpersonal influence by eliciting affective reactions in others. By evoking affective reactions in others, emotions can influence behavior of observers of the emotion. The findings in this dissertation correspond with the EASI model, because they focus on inferential as well as affective reactions to emotions of others.

With regard to the inferential effects of anger and disappointment, the findings in this dissertation showed that anger communicates information about one's limits. Specifically, anger communicates that one has high limits and does not want to give in much during the negotiation. Also, Chapter 5 showed that anger communicates lower levels of weakness (which can also be interpreted as higher levels of power). As noted above, this can lead opponents to give in themselves, to not let the negotiation end in impasse. Disappointment, on the other hand, communicates weakness (see Chapter 5). This can elicit a tendency to act prosocially, but also a tendency to act in a self-interested way.

With regard to the affective reactions to anger and disappointment, this dissertation showed that in negotiations anger and disappointment can indeed evoke emotional reactions in others, which predict subsequent behavior. In negotiations, anger can evoke reciprocal and complementary emotions in others (see Chapter 2). When anger is communicated by a high-power bargainer it evokes the complementary emotion fear in others, which leads others to give in. When anger is communicated by a low-power bargainer it evokes the reciprocal emotion anger in others, which leads others to make less generous offers. Disappointment can also evoke reciprocal and complementary emotions in others. Chapter 2 showed that, compared to communicating no emotion, disappointment evoked more reciprocal disappointment. This, however, did not predict

the behavior of bargainers. Instead, when communicated by high- as well as low-power bargainers, disappointment also evoked complementary guilt in others and this predicted behavior (i.e., it led others to make generous offers). Chapter 4 also showed that disappointment evoked guilt and Chapter 5 even showed that guilt is the key determinant of whether communicating disappointment pays or not. When disappointment evokes guilt, it seems to elicit a tendency to act prosocially. When it does not evoke guilt, it elicits a tendency to act in a self-interested way. In line with the EASI model, this dissertation thus shows that anger and disappointment can affect others via inferential as well as affective reactions.

Another way in which the findings presented in this dissertation support the EASI model, is that the findings corroborate the notion that it is essential to distinguish between different types of emotions and to not only consider the valence of emotions. It is important to acknowledge that specific emotions have differential effects (e.g., Lerner & Keltner, 2000; Tiedens & Linton, 2001; Van Kleef et al., 2006a, 2010). This dissertation indeed shows that anger and disappointment, two negative emotions, have very distinct effects on others. As described above, anger and disappointment only have a few similarities. Most of the interpersonal effects of anger and disappointment differ and one should therefore treat each emotion as a distinct predictor of behavior in negotiations.

### **Extension of the EASI model**

Besides corresponding with the EASI model, the findings in this dissertation can also be seen as an extension of the model. According to the EASI model, emotions may influence others via inferential processes or via affective processes. As explained in Chapter 1, whether inferential processes or affective reactions take precedence in how emotions affect others has been shown to depend on several factors (Van Kleef et al., 2010; 2011). One important factor is the cooperative versus competitive nature of the situation (Van Kleef et al., 2010). The EASI model posits that affective reactions become more predictive of social decisions to the extent that the situation is perceived as cooperative, whereas strategic inferences become more predictive when the situation is perceived as competitive. I agree with the EASI model that in previous research, emotional expressions in competitive situations have mainly influenced others via inferential processes. However, the findings of this dissertation show that even in competitive situations (such as the different bargaining paradigms used in this dissertation), anger and disappointment may

affect others via affective reactions. Chapter 2 indeed showed that in a competitive bargaining setting, anger can evoke reciprocal (anger) and complementary (fear) emotions in others, which predicts subsequent behavior. Similarly, Chapter 2, 4, and 5 showed that disappointment affects opponent's behavior by evoking guilt, which in turn affected their offering behavior. This dissertation thus shows that it is not always the case that inferential processes are more predictive of behavior in competitive situations than affective reactions.

Another important factor that, according to the EASI model, determines whether emotions affect others more via affective processes than via inferential processes, is the relative power of the target of the emotion. Whereas high-power individuals have less motivation to process the information conveyed by emotions, low-power individuals have a higher motivation to do so (De Dreu & Van Kleef, 2004; Fiske & Dépret, 1996; Keltner, Van Kleef, Chen, & Kraus, 2008). According to the EASI model, high-power individuals are thus more influenced by others' emotions via affective reactions, and low-power individuals more via inferential processes. The findings of Chapter 2, however, show that low-power bargainers can also be influenced by their (high-power) opponent via affective reactions. Individuals felt more fearful when dealing with a high-power angry bargainer and guilty when dealing with a high-power disappointed bargainer. These emotional reactions to anger and disappointment also predicted subsequent offers.

These are two examples of findings reported in this dissertation that indicate that although the EASI model would predict that anger and disappointment would affect opponents primarily via inferential processes, the findings of this dissertation show that affective reactions are also predictive of behavior. Of course, and this is also acknowledged by the EASI model, it can be true that affective reactions are based on inferences. For instance, we can infer from another person's disappointment that he or she expected more from us, and consequently feel guilty. This way, both affective reactions and inferential processes play a role in the same situation, and they may even influence each other. However, according to the EASI model, inferential processes take precedence (over affective reactions) when the situation is perceived to be competitive and when the observer is a low-power individual. I agree with the EASI model that previous research has mainly showed that in competitive situations and when communicated by high-power individuals, emotions affect others via inferential processes. The findings in this dissertation, however, extend the EASI model by suggesting that this is not the complete

story. This dissertation shows that even in competitive situations and in low-power situations, affective reactions can affect the behavior of others.

A second way the findings in this dissertation can serve as an extension of the EASI model is by focusing on the underlying neural mechanisms of the interpersonal effects of emotions (Chapter 3). According to the EASI model (and other social functional analyses of emotions), emotions have social functions such that they influence others' behavior, thoughts, feelings, intentions and perceptions. What these analyses do not take into account are the underlying neural mechanisms. This way, researchers can find similarities of and differences between distinct emotions that cannot be found or would not initially have been thought of based on only investigating behavioral effects. Indeed, Chapter 3 shows similarities of and differences between effects of communicated anger and disappointment that the other chapters do not show. In comparison to communicated happiness, results show decreased activation in regions that have been associated with a variety of social cognitive tasks such as perspective-taking, action understanding, and empathy. This is a similarity between the interpersonal effects of anger and disappointment that does not come up in any of the other chapters. When zooming in on the two negative emotions anger and disappointment, results also showed that compared to communicated disappointment, communicated anger activated brain regions in others associated with self-referential thinking and the maximization of own outcomes. Although this is in line with many of the behavioral results of the other chapters, the fact that anger evokes a concern for own outcomes has not been made specific by any of the other chapters. For this reason, I want to stress that besides focusing on the behavior, intentions and emotions that are influenced by others' emotions, social functional analyses should also take into account how others' emotions can influence one's brain regions.

### **Link between intra- and interpersonal effects of emotions**

As explained in Chapter 1, the effects of emotions can be divided into intrapersonal effects and interpersonal effects. The intrapersonal effects of emotions refer to the effects of emotions on people's *own* thoughts, behavior, and feelings. The interpersonal effects of emotions refer to the effects of emotions on *others'* thoughts, behavior, and feelings. Although the work presented in this dissertation focuses mainly on the interpersonal effects of emotions, it also suggests that there is a clear link between the intrapersonal and interpersonal effects of emotions. The findings showed that feelings and

intentions that are evoked by anger and disappointment are also communicated to others. For instance, people who experience anger not only feel powerful (Roseman, Antoniou, & Jose, 1996), the findings in this dissertation showed that expressions of anger also communicate to others that they are powerful and tough (Sinaceur & Tiedens, 2006; Tiedens, 2001; Van Dijk et al., 2008, Van Kleef et al., 2004a, b). Similarly, people experiencing disappointment not only feel in need of help (Van Dijk & Zeelenberg, 2002b), they also communicate this to others (Van Kleef et al., 2006a; Van Kleef & Van Lange, 2008). And people experiencing disappointment not only feel weak (Van Dijk & Zeelenberg, 2002b), Chapter 5 showed that they also communicate this to others. This dissertation thus adds to the literature on communicated emotions by linking the intra- and the interpersonal effects of emotions.

### **Practical implications**

Emotions are regarded by many as disruptive forces that interfere with decision-making. Often, professional negotiators are advised to show a poker face and not express their emotions (Nierenberg, 1968; Susskind & Cruikshank, 1987), because it signals weakness and provides information to others that you do not want them to know. The findings presented in this dissertation suggest that emotional expressions can also help to obtain high outcomes. Anger can elicit generous offers in negotiations, as long as it is not communicated in a low power position and/or directed at the person. Disappointment can elicit high offers in negotiations, under the condition that it evokes guilt in opponents (i.e., when it is not (1) directed at the offer, (2) communicated to an out-group member, and/or (3) communicated in a representative negotiation). Also, this dissertation suggests that it is not necessarily detrimental to signal weakness. Weakness can lead others to make high offers, as long as it elicits a prosocial tendency in others. However, the effects of communicating anger and disappointment may also depend on other factors that I have not discussed or investigated in this dissertation. In the next section, I consider other factors that could influence the interpersonal effects of anger and disappointment when I discuss avenues for future research.

### **Where do we go from here?**

Over the course of four empirical chapters, using different negotiation paradigms, different measures, and different emotion manipulations, this dissertation provided new

insights into the interpersonal effects of two of the most often communicated negative emotions, anger and disappointment. Although this dissertation showed similar results across different negotiation paradigms, one may wonder whether similar results would be obtained in a face-to-face negotiation. Using computer-mediated negotiation paradigms enabled us to permit a carefully controlled manipulation of the emotion. Furthermore, it enabled us to study the interpersonal effects of emotions in the fMRI scanner. I have no reason to suspect that the findings presented in this dissertation are restricted to computer-mediated interactions. Findings obtained with computer-mediated interactions such as the ones used in this dissertation are consistent with findings obtained with different paradigms, including surveys involving full-time workers (e.g., Van Kleef, De Dreu, Pietroni, & Manstead, 2006b), nonverbal manipulations of emotional expressions by means of pictures (e.g., Pietroni et al., 2008) and face-to-face negotiation (e.g., Sinaceur & Tiedens, 2006). Moreover, in Experiment 5.3 (see Chapter 5), a video of a person that expressed either disappointment or anger was used, that included facial, postural and vocal expressions of both emotions. The results of this experiment were similar to the results of Experiment 5.2 that used a verbal emotion manipulation where participants could not see the person expressing the emotion. Different channels of emotional communication are thus functionally equivalent (see also Van Kleef et al., 2011). Nevertheless, future research could investigate the generalization of the interpersonal effects of anger and disappointment across settings.

A more interesting issue perhaps concerns the cooperative mindset that disappointment evoked when it evoked guilt in others. Although the negotiation setting was competitive, participants in the experiments reported in this dissertation showed increased cooperation (i.e., they made higher offers) to disappointed opponents when disappointment evoked guilt. Anger also elicited high offers, not because it evoked a prosocial tendency in others, but more so because others did not want to reach impasse. Disappointment really seems to elicit a prosocial tendency. It may have reduced the perceived competitiveness of the situation and may have “transformed” the predominantly competitive bargaining context into a perceived cooperative situation. This can be explained by March’s logic of appropriateness (March, 1995; see also Messick, 1999; Weber, Kopelman, & Messick, 2004). In brief, this theory posits that people make decisions in social situations by categorizing the decision situation in terms of appropriateness. The question that is asked, implicitly or explicitly, is ‘What kind of situation is this?’ The answer

that is given to this question will depend on the cues available about the situation. I argue that disappointment is such a cue. It may signal that it is not appropriate to act competitively. Disappointment may therefore have reduced the default competitive situation of a negotiation and may have transformed it into a perceived cooperative one. This is in line with results by Van Doorn, Heerdink, and Van Kleef (2012), which showed that expressions of disappointment lead observers to perceive the situation as more cooperative. Future research may investigate how this transforming power of disappointment works and when it predicts opponent's behavior.

The results presented in this dissertation show how different negative emotions affect others. All of this research, however, focused on the behavior of adults. Little research has focused on the interpersonal effects of emotions on children and adolescents. This is surprising in light of the fact that children and adolescents have been shown to respond very differently to behavior of others, also in comparison to adults. There is considerable evidence that early in adolescence individuals are more inclined to act and think in a self-interested manner (Eisenberg, Carlo, Murphy, & Van Court 1995; Elkind, 1985), whereas later in adolescence, individuals tend to think more about others and take social responsibility (Steinberg, 2009). Also, children's ability to take the perspective of other people increases with age (Eisenberg, Cumberland, Guthrie, Murphy, & Shepard, 2005). More relevant for this dissertation, children's ability to distinguish between different types of emotions or between real and fake emotions also increases with age (Harris, Donnelly, et al., 1986). In addition, research focusing on distinct emotions has shown that older children differentiate more between the emotions of anger, sadness, and fear than do their younger counterparts (Jenkins & Ball, 2000). These changes across age seem to be associated with functional changes in the brain. During adolescence functional changes occur in social brain regions (see Blakemore, 2008, for a review). For instance, activity in parts of the frontal cortex increases between childhood and adulthood (e.g., Crone & Dahl, 2012), whereas activity in parts of the cingulate cortex decreases from adolescence into adulthood (Monk et al., 2008). More relevant for this dissertation (specifically to the results presented in Chapter 3), research has shown that emotion-related activity in the prefrontal cortex increases with age during adolescence (Yurgelun-Todd, & Killgore, 2006). Moreover, activity in the TPJ during social decision-making also increases with age (Van den Bos et al., 2009). In Chapter 3, prefrontal cortex activation was associated with the interpersonal effects of anger (which elicited low offers) and TPJ

activation with the interpersonal effects of happiness (which elicited high offers). One may then expect that young adolescents are more generous to angry opponents, but less generous to happy opponents. Future research could investigate whether children behave differently than adults to a communicated emotion, and whether functional changes that occur in the brain (specifically in the prefrontal cortex and the TPJ) can explain why this is the case.

The current dissertation focused on the two negative emotions anger and disappointment. As noted in Chapter 1, we focused on the interpersonal effects of these two negative emotions, because they are two of the most often communicated emotions. Moreover, they can be said to have the social function of changing other's behavior, which makes it highly relevant to investigate how they do so. It is, however, also interesting to investigate the interpersonal effects of other negative emotions in negotiation settings. Van Kleef and colleagues (2006) already investigated the interpersonal effects of other negative emotions such as worry, guilt, and regret. The communication of these emotions is less common and they do not have the apparent aim of changing the behavior of others. Nonetheless, the authors showed that communicating regret and guilt has very different effects than communicating worry or disappointment. Communicating regret or guilt elicited lower offers, whereas worry or disappointment elicited generous offers. Their results showed that not only anger and disappointment differentially affect opponents in negotiations, other negative emotions may do so as well.

Finally, given that different negative emotions have very distinct effects on opponents in negotiation, it is worth considering whether one can also find differences in the effects of different positive emotions. As far as I know, no research so far has tried to compare the interpersonal effects of different positive emotions in negotiations. For instance, it seems plausible that positive emotions that communicate power (e.g., pride) have different interpersonal effects in negotiations than positive emotions that communicate lenience (e.g., happiness). So far, when research focuses on the interpersonal effects of positive emotions, they mainly focus on one category of positive affect: happiness (Sauter, 2010). A full understanding of the social functions of emotions can be obtained by also including other types of positive emotions.

## **To conclude**

As I mentioned at the beginning of this journey, the expression “I am not angry with you, I’m just disappointed” is often used to make people feel bad about what they have done, in hopes of changing their behavior. Indeed, the first two chapters showed that in competitive situations, it is more effective to communicate disappointment than to communicate anger. However, this account of the effectiveness of communicating anger versus disappointment was qualified along the way. In chapters three and four, results showed that the effectiveness of communicating anger versus disappointment depends highly on the situation and on the target of the emotion. By taking a close look at how these two emotions affect others’ behavior and underlying neural mechanisms, this dissertation provided a more in-depth view of the social functions of negative emotions. I hope the present findings will inspire researchers in the fascinating field of the social functions of emotions. But know that if this is not the case, I will not be angry, just disappointed.