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Marc Heerdink

REGULATING DEVIANCE EMOTIONS WITH

Emotional Expressions
as Signals of Acceptance
and Rejection

REGULATING DEVIANCE WITH EMOTIONS, Emotional Expressions as Signals of Acceptance and Rejection | Marc Heerdink



REGULATING DEVIANCE WITH EMOTIONS

EMOTIONAL EXPRESSIONS AS SIGNALS OF
ACCEPTANCE AND REJECTION

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REGULATING DEVIANCE WITH EMOTIONS
Emotional Expressions as Signals of Acceptance and Rejection

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CHAPTER ONE

GENERAL INTRODUCTION

CHAPTER 1

“The case was hypothetical – but the anger was so evident that subjects were pounding their fists on the table next to the confederate’s face (the one who argued a minority position on compensation).” (Nemeth, 2010; about the Nemeth & Wachtler, 1974 study)

In the seventies, Charlan Nemeth and Joel Wachtler (1974) conducted a study in which they formed groups of five men. These groups were instructed to assume the role of a jury, and judge on the case of Mr. Smith: a washing machine repairman who sustained a severe personal injury during his work. Although he had already been compensated for hospitalization and income loss, Mr. Smith had now decided to trial his insurance company for damages due to emotional distress. The groups were instructed to discuss the case and reach a unanimous decision about how much compensation should be awarded to Mr. Smith, and were given 40 minutes to do so. Despite a monetary incentive, not a single group reached an agreement. Instead, observation of the group discussions showed that many of the group discussions spiraled out of control and ended in irritation, frustration, verbal abuse and physical threats. One participant even threatened to break another participant’s leg to demonstrate the pain and suffering involved in Mr. Smith’s case (Nemeth & Wachtler, 1974). Why? In each group, one participant consistently argued for a much lower compensation than all the other group members. His deviant position made it impossible for the group to reach its goal – to achieve unanimous agreement – and made this participant the target of these intense reactions.

Of course, the deviant participant in this study was not a real participant, but a confederate of the researchers. Yet, this study demonstrates compellingly that group members may sometimes react with intense emotional reactions to another group member’s behavior. Such emotional reactions vary with different types of groups and group goals. Football players react with jubilation and excitement when a teammate scores a goal, or with dejection and frustration if their teammate misses an open scoring opportunity. Colleagues may express pride and admiration (and in some cases envy) when someone is promoted to a managerial position. And participants in a brainstorm session may express happiness and relief when someone finally comes up with a solution for the difficult problem they’re trying to solve. Thus, it is clear that the behavior of one individual group member can trigger emotional reactions in other group members. This simple observation raises the question what the effect of these emotional reactions is? Do they influence the group member who triggered them? And if so, what would have happened if the deviant participant in Nemeth and Wachtler’s study (1974) had not been a confederate, but a naive participant instead?

One approach to this question would be to investigate why the participants in this situation reacted in such an emotional way. Some social psychologists have regarded

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these emotional reactions simply as a by-product of the experience of these emotions (Buck, 1985; Festinger, 1950). Although this interpretation does not rule out that emotional reactions may influence the deviant, it doesn't attach much importance to this possibility either. Intuition, however, suggests that these emotional reactions may reflect a conscious attempt to influence the deviant instead. After all, we prefer others to be happy about us rather than angry. To the extent that participants realized that people tend to avoid the negative and approach the positive (Carver & White, 1984), they may have deliberately expressed their anger in such an extreme and explicit way because they hoped it would help influence the deviant. Thus, the lay interpretation suggests that happiness and anger may be used as rewards and punishments for another person's behavior – leading to a crude type of behavioral conditioning (Keltner & Haidt, 1999). Yet, a closer consideration shows that the story should be more complicated than that. For instance, managers don't usually just cancel planned layoffs when their employees get angry about the plan. Thus, it is a valid question to ask when and how other group member's reactions will influence us to behave in one way or another.

The aim of this dissertation is to provide more insight into the mechanisms of emotional influence processes within groups. Do one group member's emotional expressions carry the potential to influence other group members? How and when does this influence work? Because many different answers to this question may be formulated, I have focused on one particular situation that is pertinent to group functioning. It concerns phenomena that have historically attracted much interest from social psychologists (e.g., Asch, 1956; Festinger, 1950; Schachter, 1951), and are among the most well-researched topics in social psychology: conformity and deviance. Despite this great attention to conformity and deviance, the ways in which the other group members' emotional reactions impact a deviant group member remain poorly understood. Is the deviant affected by these emotional reactions, and in what way? And is it the case that emotional reactions to deviance are functional in regulating deviance in groups? My dissertation concerns these questions.

Before sketching the historical and conceptual background for my dissertation, let me first explain what my dissertation is not about. Over the years, I have found out that it is possible to take various perspectives on the phenomena that I have studied, and that some misunderstandings about the perspective and focus are especially likely to arise. I have always found these misunderstandings interesting, because they demonstrate that there are many facets of emotional influence in groups. This suggests that emotions are, indeed, very important phenomena for group functioning. However, they also made me realize that it is important to establish the boundaries of the phenomena that I have investigated because the distinctions between these and related phenomena are subtle, yet very important for a correct interpretation of this dissertation. Thus, it seems best to start by pointing out what this dissertation is not about.

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First, it is not about the reasons why these group members (or people in general) may come to experience or feel emotions in the first place. Of course, the question of whether or not emotional reactions are triggered, for instance, by group-level concerns (e.g., E.R. Smith, 1993; E.R. Smith, Seger, & Mackie, 2007), individual-level concerns (e.g., Lazarus, 1991), or by processes such as emotional contagion (Hatfield, Cacioppo, & Rapson, 1994) is an interesting and a relevant one; however it is a question that is not answered in my dissertation. Instead, I take the emotional expression as a starting point for my analysis: I confront people with certain emotional expressions¹, and I investigate the subsequent effects. In fact, I make no assumptions about whether these emotions are actually experienced by the expressers.

Second, the intention underlying the expression of a certain emotion is also outside the scope of this dissertation. That is, I acknowledge that people may be influenced by emotional expressions in ways not anticipated or intended by the expresser – and similarly, that people may not be influenced by a certain emotional expression in the way that was intended by the expresser. Furthermore, although there is evidence that people are quite good at linking specific expressions to specific emotions (e.g., from posed facial expressions; Ekman, 1982; 1993), it is also possible that an expression is interpreted as referring to a different emotion than how the expresser intended it. The well-known phrase “I’m not angry, I’m sad” suffices to illustrate the problem. Yet when such ‘misperception’ occurs, I assume that the interpretation of the expression by the observer is more important than the expresser’s intention, or even how researchers would classify the expression on the basis of, for instance, facial action unit coding (Ekman & Friesen, 1978).

Thus, in this dissertation, I investigate emotional influence by considering it as a type of communication, rather than the transmission of mental states (as in an intention or experience). As with any form of communication, the eventual effect on the receiver depends not only on the sender, but also on the channel and the interpretation given to the message by the receiver (e.g., Chandler, 1994). Against that background, in the remainder of this introduction, I present my answer to the question of how emotional reactions to deviance may help regulate deviance in groups. It entails taking a social-functional approach to these emotional reactions, which I will introduce in the next section. This section is followed by a more detailed analysis of conformity and deviance, which constitute the key antecedents and consequences that I have studied for this dissertation. Then, after describing prior perspectives on the potential consequences of emotional reactions to deviance, I will

¹ This formulation is intentionally imprecise for the sake of brevity and clarity. As I will explain in the paragraph on the social functional approach to intra-group emotional influence below, the more precise formulation is “I confront people with expressions that are consensually understood as indicating that the expresser is in a certain emotional state”.

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present a general theoretical framework that summarizes the research in this dissertation.

A Social Functional Approach to Intra-group Emotional Influence

By considering how individual group members are influenced by other group members' emotions, I take a social-functional approach to understanding emotion (e.g., Fischer & Manstead, 2008, in press; Frijda & Mesquita, 1994; Keltner & Haidt, 1999, Parkinson, 1996; Van Kleef, 2009). The social-functional approach to emotion starts from the observation that throughout human evolution, humans have lived in groups, mostly of the small, face-to-face type known as family bands (Brewer & Caporael, 2006; Spoor & Kelly, 2004). As a result, humans have evolved in ways that allow them to function as social animals. For instance, the human brain is thought to have become increasingly large to accommodate the many social bonds that human beings should be able to form and maintain (Dunbar, 1995), and the need to belong has developed as a fundamental need to form positive social bonds with other people (Baumeister & Leary, 1995). In order to form and maintain these social bonds, humans need to be able to co-ordinate and regulate their relationships to each other. The social-functional approach to emotions assumes that emotions have evolved because they help co-ordinate and regulate social interactions (Fischer & Manstead, 2008; Keltner & Haidt, 1999).

Before going into more detail about the social functions of emotion, it is important to discuss what an 'emotion' is. My conceptualization is based on what are commonly understood to be core components of emotion. An 'emotion' typically refers to a subjective experience (Scherer & Tannenbaum, 1986), associated with a certain level of physiological arousal and (un)pleasantness (Russell & Barrett, 1999). In contrast to moods, which are more enduring, lower in intensity, and more diffuse, emotions are short-lived, intense, and have a certain object or intent ('directionality'; Parrott, 2001). Emotions can therefore be characterized by specific appraisals of an event (i.e. the object of the emotion; Lazarus, 1991; Roseman, Antoniou, & Jose, 1996; Scherer, 1999; C.A. Smith, Haynes, Lazarus, & Pope, 1993, C.A. Smith & Lazarus, 1993) or 'core relational themes', i.e., how the relation between elicitor and expresser should be characterized (C.A. Smith & Lazarus, 1993), and motivational states or action tendencies (e.g., Carver & Harmon-Jones, 2009; Frijda, 1986; Frijda, Kuipers, & Ter Schure, 1989).

Throughout this dissertation I will refer to an 'emotional expression' as any concrete behavior or symbol that is interpreted to indicate that the expresser is in a certain emotional state. This conceptualization reflects that I take the perspective of the observer to account for emotional influence; consequently, the observer's perspective plays a key role in determining what constitutes an emotional expression. Through social learning, certain behaviors or symbols may come to be reliably understood as referring to specific emotions by all people within a (sub)culture. Such

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behaviors include facial expressions (Ekman, 1982; Fridlund, 1994), but also postural expressions (e.g., Coulson, 2004), verbal descriptions of emotional states (“I’m disappointed”), and emoticons (e.g., :-); Derks, Fischer, & Bos, 2008), but it is not restricted to these categories. Instead, any utterance, symbolic reference, or behavior may acquire the status of an emotional expression, as long as it is understood by an observer as referring to an emotion. This broad conceptualization is consistent with the observation that the effect of one person’s emotional expression on another person is independent of the modality through which the emotion was expressed (van Kleef et al., 2011). If these effects hinge on activating an emotion concept in observers, the medium through which this emotion concept is activated would indeed not matter. Finally, an ‘emotional reaction’ is simply an emotional expression that is understood by an observer as having been caused by the observer’s behavior (i.e., implies a perceived contingency between behavior and expression).

Now that it is clear what emotions, emotional expressions, and emotional reactions are, I can return to the social functional approach to emotions. The social functions of emotion can be described at four levels of analysis (Keltner & Haidt, 1999): the individual, the dyad, the group, and the culture. Because my dissertation concerns group processes, I primarily focus on the group level of analysis. Within this level of analysis, I take the perspective of a deviant individual. This means that I will consider how emotional reactions help regulate deviance in groups by focusing on how the deviant individual is influenced by these emotional reactions.

Three social functions of emotions have been distinguished on the group level (Keltner & Haidt, 1999). First, shared emotions help individuals define group boundaries (especially negative emotions) and identify group members (especially positive emotions; see e.g., Spoor & Kelly, 2004). Second, emotions that are part of role prototypes (e.g., anger for the leadership role; Tiedens, Ellsworth, & Mesquita, 2000) may help individuals define and negotiate group-related roles. Third, collective emotional behavior may help groups resolve potential problems. As an example of this function, Keltner and Haidt (1999) describe that groups of primates sometimes join in collective celebration before valuable resources are allocated, presumably because this helps solidify social bonds.

The social functions of emotion on the group level, as conceptualized by Keltner and Haidt (1999) thus primarily stem from collective or shared emotional behavior. My aim is to extend the understanding of these functions by showing that discrete emotional reactions that surface within a group, such as emotional reactions to deviance, are also important for understanding how emotions regulate group life. My dissertation focuses especially on extending the third function, by showing that such emotional reactions may help resolve the problem that is posed by deviance.

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Conformity, Deviance, and Reactions to Deviance

The question of how groups respond to deviance, and how they can maintain uniformity among their ranks has fascinated social psychologists for a long time. In Festinger's classic work on 'informal social communication' (1950), he describes many of the forces that impinge on individual group members, including how groups respond to deviant group members. His analysis centers on the extent to which deviants are pressured to adopt the majority's position, rather than maintaining their own. This pressure is exerted by means of communication to the deviant, and increases in intensity to the extent that the deviant is seen as violating social reality and hindering group locomotion (i.e., the attainment of group goals). Importantly, given that he assumes this communication to increase to the extent that the group perceives that the deviant may change his position or opinion, Festinger assumes this communication to be instrumental in changing the deviant's position. Interestingly, he also mentions emotions that are expressed during such communication, and speculates about their functions:

“An important variety of communications undoubtedly results from the existence of an emotional state in the communicator. The existence of joy, anger, hostility and the like seems to produce forces to communicate. It seems that communications resulting from the existence of an emotional state are consummatory rather than instrumental.” (Festinger, 1950, p. 281)

Festinger's (1950) analysis of the role of emotions and emotional expressions in maintaining uniformity thus suggests that the expression of emotions is merely a by-effect of the experience of emotions (the consummatory function). His analysis, however, can be criticized on two grounds. First, he ignores the possibility that even if they are expressed for consummatory reasons, emotions can still have interpersonal effects – and thus, be instrumental and consummatory at the same time. Second, and more importantly, the idea that emotions are not instrumental in this contexts is unlikely in the face of recent theorizing and research, which provides strong evidence that one person's emotions can influence another person in many contexts (e.g., Fischer & Manstead, 2008; Parkinson, 1996; Van Kleef, Van Doorn, Heerdink, & Koning, 2011). Emotional reactions to deviance – and especially those mentioned by Festinger (1950), happiness and anger – may thus indeed be instrumental in regulating uniformity in groups. Such instrumentality may be demonstrated by examining whether emotional reactions to deviance may pressure the deviant into conformity, and this is indeed the aim of my dissertation. Before turning to how these emotional expressions may help regulate deviance in groups, I will first discuss what I mean by conformity and deviance, the motives underlying this behavior, and their consequences for group functioning.

Conformity

Conformity can be defined as the act of adjusting one's overt behavior in such a way that it increases the support of the group norm. Conformity typically involves active behavioral change, such as adjusting one's behavior to match the behavior of others (cf. Cialdini & Goldstein, 2004; Nail, MacDonald, & Levy, 2000). A famous example of this type of behavior is calling out the wrong line number as the longest in the face of a unanimous, but incorrect majority (Asch, 1956). Conformity, however, also includes more passive behavior, such as keeping a dissenting opinion to oneself (Hayes, 2007; Noelle-Neuman, 1974). This type of conformity has been termed 'conformity by omission' (Cialdini & Trost, 1998). Both active and passive forms of conformity have similar consequences from the perspective of the group: the threat to group functioning that is posed by deviance is reduced (Festinger, 1950). Note that this definition implies that conformity is not necessarily a discrete class of behaviors (i.e., an exact match between the former deviant's behavior and the majority), but that conformity can also be partial movement toward the group norm, or a mixed strategy of partially conforming and partially maintaining uniqueness (Hodges & Geyer, 2006; Hornsey & Jetten, 2004).

The motives underlying conformity have received a great deal of research attention. Two types of influence processes underlying conformity are traditionally distinguished: informational and normative influence (Deutsch & Gerard, 1955). Normative influence is based on the power of the majority to administer social rewards (acceptance) and sanctions (exclusion) to individual group members (Bond, 2005). Normative influence thus stems from a desire for social approval (i.e., affiliation motive; Cialdini & Goldstein, 2004; Cialdini & Trost, 1998; Deutsch & Gerard, 1955). Informational influence, on the other hand, is based on the assumption that the majority is usually right. Indeed, on many issues, the 'right' answer depends more on social reality than on factual information (e.g., opinions are quite divided on matters such as whether Ajax is a better football club than Feyenoord; see also Festinger, 1954), and the more people advocate one position or the other, the more valid their opinion seems (David & Turner, 2001). Informational influence stems from a desire to gain an accurate understanding of the world (i.e., accuracy motive; Cialdini & Goldstein, 2004; Cialdini & Trost, 1998; Deutsch & Gerard, 1955). More recent conceptualizations of the motivations underlying conformity have generally upheld this distinction between accuracy and affiliative motives for conformity (e.g., Chen, Schechter, & Chaiken, 1996), although it has been suggested that a third motive, self-concept maintenance, may act as a superordinate motive (Cialdini & Goldstein, 1998; Cialdini & Trost, 1998). Despite the conceptual independence of these motives, they are difficult to separate empirically (Bond, 2005; Cialdini & Goldstein, 2004; David & Turner, 2001).

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The affiliative motive that underlies conformity is most relevant to the current dissertation. As implied by this motive, conformity can be used as a strategy to elicit liking and acceptance from a group. Indeed, from the group's perspective, conformity is useful: it affirms and strengthens the group identity (Klein, Spears, & Reicher, 2007), and it creates the sense of trust necessary for interdependence among group members (e.g., Tanis & Postmes, 2005). Groups do indeed value conformity (Christensen, Rothgerber, Wood, & Matz, 2004), and the increased similarity between group members that results from conformity can be expected to increase liking and cohesion (Byrne, 1961; Montoya, Horton, & Kirchner, 2008). The idea that groups value conformity is also echoed by the idea that conformity helps gain 'idiosyncrasy' credits (similar to respect or esteem; Hollander, 1960) and may be used as a strategy to increase one's attractiveness as a group member (Levine & Moreland, 1994; Moreland & Levine, 1989). Conformity, then, can be seen as strategic behavior aimed at gaining acceptance in a group.

Deviance

Despite the pressure to uniformity and conformity (Asch, 1956; Festinger, 1950) that is often seen as a pervasive and inevitable consequence of group membership, deviance is also very common in groups (Jetten & Hornsey, 2014). Deviance may be broadly defined as any behavior or expression of an opinion or idea that is intentionally or unintentionally different from the group norm (for a similar definition, see Jetten & Hornsey, 2014). Thus, deviance is specific to a certain group and context. For example, eating with your hands may be seen as perfectly acceptable when eating chicken, but the same behavior is less acceptable when eating risotto. It should be noted, however, that this definition does not refer to deviance in the sense of delinquency, substance abuse, or risk behavior. Although such behavior is deviant in reference to the society as a whole, it is not necessarily deviant in relation to the reference group; in fact, several studies suggest that it is conformity, rather than deviance as construed here, that underlies such behavior (e.g., Crandall, 1988; Maxwell, 2002).

Many different motives may underlie deviance (Jetten & Hornsey, 2014). For instance, deviance – especially on taste dimensions – is an effective way to afford oneself a degree of uniqueness, which helps someone stand out to attract the attention of potential partners (Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006). For the same reason, people do not mind being in the minority on a taste dimension as much as being in the minority on an opinion dimension (Spears, Ellemers, & Doosje, 2009). Deviant behavior may also be motivated by a desire for status or power, because deviant behavior leads to inferences of status and competence in the eyes of others (Ridgeway, 1978; 1981), and norm breaking may also help people to come across as powerful (Van Kleef, Homan, Finkenauer, Blaker, & Heerdink, 2012; Van Kleef, Homan, Finkenauer, Gundemir, & Stamkou, 2011). It is

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demonstrated, for instance, by the red sneakers effect: being dressed casually in a business context can confer greater status than following the formal dress-code (Bellezza, Gino, & Keinan, 2014). Yet another motive is that highly identified group members are likely to deviate from the group norm if the norm is perceived to be dysfunctional to group goal attainment (Packer, 2007; Packer & Chasteen, 2009).

From the group's perspective, deviance is a mixed blessing. On the one hand, stimulating deviance has been found to increase group creativity and to improve group decision-making (e.g., De Dreu & West, 2001; Nemeth, Personnaz, Personnaz, & Goncalo, 2004; Troyer & Younggreen, 2009). For instance, disagreement may help groups consider alternative viewpoints, which can help avoid the trap of group-think (Nemeth, Connell, Rogers, & Brown, 2001). Groups may therefore appreciate or accept deviance, especially if the deviance is perceived as beneficial for group functioning (Ellemers & Jetten, 2013). On the other hand, deviance may be seen as a threat because it violates the shared reality in the group, thus endangering the harmony and trust in the group (Mannetti, Levine, Pierro & Kruglanski, 2010; Marques, Abrams, Paez, & Martinez-Taboada, 1998; Sani, 2005). Deviance also threatens effective goal pursuit when coordinated action is required (Festinger, 1950). Thus, deviance is not universally bad or good for groups; instead, many contextual factors come into play when judging whether a certain deviant act or position is advantageous or harmful to the group.

Reactions to Deviance

Because deviance can constitute a threat to group functioning, it may lead to strong social sanctions (Eidelman, Silvia, & Biernat, 2006). Orcutt (1973) distinguishes two classes of reactions to deviance: inclusive and exclusive. Inclusive reactions are intended so that the deviant may remain a member in the group, whereas exclusive reactions are intended to remove the deviant person from the group, that is, to exclude him or her as a group member. Inclusive reactions are characterized by a high degree of communication and strong overt hostility, whereas exclusive reactions are characterized by a low degree of communication and little overt hostility. Passive hostility (e.g., in the form of dislike), however, is higher for exclusive reactions than for inclusive reactions. Importantly, Orcutt (1973) argues that exclusive reactions may develop over time if inclusive responses that increase in intensity do not have the intended effect (see also Schachter, 1951).

Prior theory and research shows that initial inclusive reactions in the form of increased communication toward the deviant are indeed followed by exclusive reactions if the deviant does not change his/her position (e.g., Schachter, 1951; Sampson & Brandon, 1964). Importantly, observations indicate that these reactions are related to the experience and expression of anger. For instance, in the quote above, Festinger (1950) argued that 'forces to communicate' to the deviant are produced by the experience of anger. Overt expressions of hostility and anger towards a deviant

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have also been found to increase with the amount of communication directed at the deviant (Sampson & Brandon, 1964), and in the Nemeth and Wachtler (1974) study that Nemeth (2010) referred to in the opening quote, anger toward the opinion deviant is also apparent. Finally, a study that tested children's reactions to imagined and actually deviant classmates (Juvonen, 1991) shows that children felt more anger and less sympathy for a deviant child, which in turn predicted rejection.

In sum, previous research has indicated that deviance may be both functional and dysfunctional for groups. It is therefore important to understand how deviance may be either curbed or encouraged in groups. Deviance can elicit strong reactions from other group members. When deviance is seen as a threat, it may trigger inclusive reactions that are accompanied by the expression of anger, and these may change into exclusive reactions if a deviant does not change his or her behavior for the better. Less is known about the reactions that can be expected when deviance is not judged to be a threat for group functioning. As Festinger (1950) suggests, these reactions may include the expression of joy, which is plausible given that deviance may sometimes be conducive to achieving group goals (e.g., in brainstorming). The likelihood and prevalence of such positive reactions, however, is unknown. Building on these findings, I will suggest that expressions of anger are somehow involved in pressuring the deviant individual into conformity – and that happy reactions may do the reverse.

Prior Research on Consequences of Emotional Reactions

Before turning to a theory of how emotional reactions may be functional in regulating deviance, I will review two lines of research that each provide predictions regarding the consequences of emotional reactions to deviance. The first, on group affect and emotion (Barsade & Gibson, 1998; Kelly & Barsade, 2001; Spoor & Kelly, 2004), takes a group-level perspective on such functions, and focuses on group-level affect as the explanatory variable. The second, Emotions as Social Information (EASI) theory (Van Kleef, 2009; Van Kleef, De Dreu & Manstead, 2010; Van Kleef, Van Doorn, Heerdink & Koning, 2011) takes an interpersonal perspective and explains how one person's behavior may be influenced by another person's emotional expressions.

Group Affect and Emotion

Previous research on intra-group emotional processes has primarily focused on understanding the origins and consequences of group affect (Barsade & Gibson, 1998; Spoor & Kelly, 2004). As the term 'group affect' implies, research in this area assumes that affect also exists on the group level: Just as individuals may be said to have a certain emotion, or be in a certain mood, groups can have a certain affective state (George, 1990). Group members are aware of this group affective state, and experience it as real (Kelly & Barsade, 2001). For instance, when people say "the train

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delay took everyone by surprise” or “there was a good atmosphere during the meeting”, they are referring to such a group-level affective state. Although group affect is potentially sensitive to differences in affective experiences and expressions within a group (Barsade & Gibson, 1998; Kelly & Barsade, 2001), research has primarily focused on causes and effects of shared affective experiences (i.e., similarity) in groups and teams. I will therefore focus on group affect as a shared experience within a team. I will first discuss the underlying mechanisms, and then turn to how this theory would account for the consequences of emotional reactions to deviance.

Group affect results from the combination of top-down and bottom-up processes (Collins, Lawrence, Troth, & Jordan, 2013; Kelly & Barsade, 2001). Bottom-up processes refer to processes through which group members influence each other’s affect, which in turn shapes group affect. Such processes typically require interaction between team-members to occur (Klep, Wisse, & Van de Flier, 2011). The key mechanism that is used to account for these effects is emotional contagion (Barsade, 2002; Hatfield, Cacioppo, & Rapson, 1994), but other mechanisms also play a role, including intentional processes such as impression management (Kelly & Barsade, 2001). Negativity may be expected to have a proportionally greater impact in these bottom-up processes than positivity (Felps et al., 2006). Top-down processes, in contrast, can also operate without interaction between team members. For instance, shared affective experiences can be caused by similar affective reactions to group-related events or conformity to affective group norms (e.g., Moons, Leonard, Mackie, & Smith, 2009; E.R. Smith, 1993; E.R. Smith, Seger & Mackie, 2007). Such a mechanism may account for why Dutch people feel happy when the Dutch national football team scores a goal in the World Championship: The self-categorization as a Dutch person makes the goal relevant to one’s concerns as a group member (i.e., winning the match). Thus, the more people identify with a group, the more they respond to group-based concerns as if they were their own.

Using a group-affect approach, it may be predicted that emotional reactions to deviance will impact group affect through bottom-up processes. Accumulating evidence illustrates the potency of these bottom-up processes in shaping group affect (e.g., Totterdell, Kellet, Teuchmann, & Briner, 1998; Totterdell, 2000). Barsade (2002) established the causality of these effects by having a trained confederate express positive or negative affect during a group decision-making task, and found that the confederate’s mood influenced the other group members’ affect in a valence-congruent way. Later studies found that negative and positive affect spread independently in teams (Ilies, Wagner, & Morgeson, 2007), and that leaders can play an important role in the development of group affect (Sy, Côté, & Saavedra, 2004; Sy, Choi, & Johnson, 2013). Furthermore, in line with the idea that interpersonal effects of emotion are similar across different modalities, this spreading of affect has also been found in computer-mediated communication where emotions were expressed through typed messages (Cheshin, Rafaeli, & Bos, 2011). Thus, through

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these bottom-up processes, it may be expected that angry reactions will lead to more negative group affect, whereas happy reactions may lead to more positive group affect.

Turning to the functionality of this group-level affect, Spoor and Kelly (2004; see also Keltner & Haidt, 1999) propose that the quick spreading of both positive and negative emotions served two functions during human evolution: information and social bonding. The quick spread of affective experiences, especially negative ones, is proposed to be an efficient means of providing members with information about relevant threats in the environment. A classic example of this point is the case in which one group member encounters a predator and reacts fearfully. If other group members are quick to catch this fear, this will mobilize them to flee from the predator – even though they haven't seen the predator themselves. Second, the sharing of positive affect is argued to help create cohesiveness, which enhances cooperation. Congruent with this idea, laughter has been proposed to play an important role in social bonding (Dezecache & Dunbar, 2012), and self-reinforcing cycles of positive affectivity have been linked to better overall group functioning (e.g., Totterdell, 2000; Walter & Bruch, 2008).

Despite this proposed universal functionality of both positive and negative group affect, the evidence shows that one type of affect is usually 'better' than the other. Early studies found that positive group affect is generally associated with better group functioning than negative group affect (Barsade, 2002; George, 1990; Totterdell, 2000). More recent evidence suggests that the reverse may also be true, depending on the type of task that a group performs. Specifically, positive group affect has been found to lead to better performance on creative tasks than negative affect, but the reverse has been found on analytic tasks (Klep, Wisse, & Van der Flier, 2011). Thus, contextual factors appear to play an important role in determining when particular emotional reactions to deviance may be functional for groups.

Part of the difficulty of applying the group-affect approach to understanding the functionality of emotional reactions in regulating deviance, is that the group-affect approach does not take the 'directionality' of emotions into account (Parrott, 2001). The event that an emotion refers to can be important to understanding its consequences. For instance, the discussion on evolutionary functions of the spreading of negative emotions in a group by Spoor and Kelly (2004) mainly focuses on events that took place outside of the group, and indeed, it is easy to see why. But can the same prediction be applied to a situation in which the emotional trigger takes place within the group, as when someone deviates? Furthermore, group-affect theory only offers group-level predictions about the consequences of emotional reactions, yet offers no predictions about the behavior of the individual group member. The theory is mute on the influence that emotional reactions may have on the deviant group member. Finally, group-affect theory approaches the question using a valence approach. Thus, for group-affect theory, it does not matter whether the emotional reaction is angry, sad, or contemptuous. Research on emotional influence, however,

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shows that two emotions of the same valence may have different effects (Van Kleef et al., 2011), and that better predictions may thus be achieved by considering emotions in an emotion-specific way. Therefore, in the next section, I will review another line of research that does not have these three limitations.

EASI Theory

Emotions As Social Information (EASI) theory proposes that an actor's emotional expression may affect an observer's behavior through two distinct pathways (Van Kleef, 2009; Van Kleef, De Dreu, & Manstead, 2010; Van Kleef, Van Doorn, Heerdink, & Koning, 2011). The first is the affective pathway, and refers to the observer's affective reactions to the actor's emotional expression. These affective reactions include shared or similar affective reactions, that occur, for instance, if the observer becomes angry as a result of the actor's anger due to primitive emotional contagion (Hatfield, Cacioppo, & Rapson, 1994). However, it is also possible that different affective states may emerge in the affective pathway. For instance, there is accumulating evidence that one person's facial expressions may trigger different facial expressions in other people (e.g., Elfenbein, 2014; Häfner & IJzerman, 2011; U. Hess & Fischer, 2013; Lanzetta & Englis, 1989; Likowski, Mühlberger, Seibt, Pauli, & Weyers, 2011). Because facial feedback is one of the mechanisms through which emotional contagion occurs (Hatfield, Cacioppo & Rapson, 1994; Strack, Martin, & Stepper, 1988), such asymmetric mimicry may lead to asymmetric affective reactions. The inferential pathway, in contrast, refers to cognitively mediated informational effects. For instance, emotional expressions provide information about the actor's goals, intentions, and/or appraisal of the situation. By reverse-engineering the appraisals that may have been responsible for the actor's emotion, it is possible to infer much information (De Melo et al., 2014; Hareli & U. Hess, 2010).

When the affective and informational pathways motivate different types of behavior, two moderators determine the relative influence of the two pathways. First, the appropriateness of the emotional expression is important. More appropriate emotional expressions increase the relative influence of the informational pathway, and less appropriate emotional expressions increase the relative influence of the affective pathway. The appropriateness of an emotional expression, in turn, is determined by the social context. For instance, an angry expression is considered inappropriate for a service worker (Kramer & J.A. Hess, 2002), but it may be judged less inappropriate for an emergency patient who has waited for four hours (Cheshin, Rafaeli, & Eisenman, 2012). The second moderator is the extent to which the observer is motivated and able to process information. To the extent that the observer is more motivated and able to process information, the relative contribution of the informational pathway will increase. Dispositional factors such as the need for cognition (Neuberg & Newsom, 1993) and the need for cognitive closure (Webster &

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Kruglanski, 1994), and situational factors such as time pressure and cognitive load affect this motivation.

Support for EASI theory has been found across a number of domains. Much work has been devoted to understanding the effects of emotional expressions in dyadic negotiations (e.g., Kopelman, Rosette, & Thompson, 2006; Sinaceur & Tiedens, 2006; Van Kleef, De Dreu, & Manstead, 2004a, 2004b). For instance, expressing anger has been found to lower the observer's negotiation demands, whereas expressing happiness causes higher demands (Van Kleef et al., 2004a, 2004b). Expressions of disappointment can both communicate weakness and evoke guilt in a negotiation partner, which may either increase or decrease negotiation demands (e.g., Lelieveld, Van Dijk, Van Beest, Steinel, & Van Kleef, 2011; Lelieveld, Van Dijk, Van Beest, & Van Kleef, 2013). Furthermore, supporting the role of the moderators proposed by EASI theory, a number of contextual factors including appropriateness (Van Doorn, Van Kleef, & Van der Pligt, 2015) and power (as a determinant of epistemic motivation; Lelieveld et al., 2012; Van Kleef & Côté, 2007) have been found to moderate these effects. EASI is also supported by research outside the negotiation domain, for instance, in the domains of teaching (Van Doorn, Van Kleef, & Van der Pligt, 2014) and attitude change (Van Kleef, Van den Berg, & Heerdink, in press).

A few studies have also tested EASI in a group setting. These studies (Van Kleef et al., 2009; Van Kleef, Homan, Beersma, & Van Knippenberg, 2010; see also Sy, Côté, & Saavedra, 2005) investigated the effects of a leader's emotional expression on follower motivation and performance. It was found that a leader's expression of anger led to higher team effort and performance than a leader's expression of happiness when the team was either high in epistemic motivation (Van Kleef et al., 2009) or low in agreeableness (Van Kleef, Homan, et al., 2010). Supporting the moderating role of epistemic motivation proposed by EASI theory, the effect of the leader's emotional expressions on team performance was mediated by inferences of performance in teams with higher epistemic motivations, but not in teams with lower epistemic motivations (Van Kleef et al., 2009). The findings with regard to agreeableness illustrate the role of appropriateness. Because agreeableness reflects a desire for social harmony, higher agreeableness lowers the perceived appropriateness of angry expressions. In line with the predicted greater influence of the affective pathway when emotional expressions are deemed inappropriate, teams with higher levels of agreeableness experienced a greater subjective workload when the leader expressed anger, which in turn lowered their performance (Van Kleef, Homan, et al., 2010).

Applying EASI theory to the functionality of emotional reactions in regulating deviance raises the question of what the exact content of the inferential and affective pathways may be in this context. In EASI theory, the content of the two pathways is context-dependent. This is especially true for the informational pathway. For instance, in the negotiation studies, emotional expressions influence inferences of limits and weakness (Lelieveld et al., 2011; Van Kleef et al., 2004b), whereas in the leadership

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studies, the leader's angry expressions led to inferences of low performance (Van Kleef et al., 2009). Another line of studies showed that emotional expressions influence whether an ambiguous situation is construed as more cooperative or competitive (Van Doorn, Heerdink, & Van Kleef, 2012). The affective pathway is similarly context-dependent (e.g., U. Hess & Fischer, 2013). For instance, a negotiator's power has been found to influence whether the affective reaction of guilt emerges when the negotiation partner expresses disappointment (Lelieveld et al., 2013). Further limiting the applicability of EASI theory to the current question, EASI theory was not developed to deal with the possibility of multiple expressers of emotion, whereas deviance may evoke emotional reactions in multiple group members (and these do not even have to be identical emotional reactions).

In sum, neither group-affect theory nor EASI theory can be applied to the current question in a straightforward way. Group-affect theory does not offer individual-level predictions about how the behavior of individual group members is influenced by their fellow group members' emotional reactions. The only individual-level predictions that can be inferred from group-affect theory are that individual group members will feel more positive if the others react with positive emotions, and that they will feel more negative if the others react with negative emotions. This valence approach neglects the findings obtained in the context of EASI theory (for a review, see Van Kleef et al., 2011) that different emotions – even emotions of the same valence – can have different interpersonal effects. EASI theory, on the other hand, suggests that both inferential processes and affective processes may play a role in determining the individual group members' behavior, but it is not clear which reactions are to be expected in both pathways in the current context. Furthermore, EASI theory was not developed to account for the influence of multiple emotional reactions. Given that neither theory can be used to explain why and how individual group members are influenced by their fellow group members' emotions, I propose a different explanation that builds on insights obtained from both lines of research. In the following section, I will outline the basic mechanism that underlies such influence: different emotional expressions signal different levels of acceptance.

Emotional Expressions as Signals of Acceptance and Rejection

My analysis of the functionality of emotional expressions in regulating deviance starts with the idea that different emotional expressions may serve as signals of different degrees of acceptance in the group. Acceptance refers to the fulfillment of the need to belong: a fundamental drive to form and maintain positive, lasting, and significant interpersonal relationships (Baumeister & Leary, 1995). Although the need to belong does not necessarily have to be fulfilled by belonging to groups, group membership is frequently a source of the sense of belonging. When people experience a threat to their sense of belonging, they may be said to feel rejected: a subjective

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experience of threat to one's sense of belonging. Feeling rejected can be contrasted with feeling accepted, which involves a heightened state of belonging.

Although the terms rejection and acceptance are frequently used as if they refer to discrete or categorical states, the two are best conceptualized as two extremes of a continuous, bipolar dimension. This means that people may experience different shades or degrees of rejection (and acceptance), but also a neutral state. Some researchers have conceptualized rejection and acceptance as a unipolar dimension (e.g., Leary, Twenge, & Quinlivan, 2006), but the neutral midpoint is needed to reflect that many social situations are ambiguous or neutral with respect to one's degree of acceptance. In such situations, people do not experience a specific degree of acceptance or rejection. For instance, when a cashier in the supermarket greets us, we feel rejected nor accepted – we feel the same after having been greeted as before (though if she doesn't greet us, we do feel rejected). Furthermore, the existence of this midpoint implies that acceptance is not merely the absence of rejection, but rather a (conscious) state of heightened acceptance.

Rejection has powerful effects on behavior and motivation (e.g., Baumeister et al., 2005). Several theorists propose that reactions to rejection unfold in multiple stages (e.g., Smart Richman & Leary, 2009; Williams, 2007; 2009). The first stage is the immediate reaction, and includes responses such as hurt feelings (Smart Richman & Leary, 2009), pain, negative affect, and a threat to a number of fundamental motives, including the need to belong and the need for control (Williams, 2007; 2009). In the next stage, people behave in ways that are aimed at restoring these needs (Williams, 2007; 2009). This results, for instance, in a higher sensitivity to signals of acceptance such as smiling faces (DeWall, Maner, & Rouby, 2009). When rejection is prolonged and repeated, people may enter the third stage, which is characterized by resignation and depression. This third stage is outside of the focus of this dissertation, however, because I focus on the short-term consequences of emotional reactions to deviance.

To avoid these negative consequences of rejection, people continuously monitor the fulfillment of their need to belong. This social monitoring system (Pickett & Gardner, 2005) is highly sensitive to temporary threats to people's sense of belonging. This high sensitivity explains why people can feel (and act) rejected even though they recognize that the other person accepts them – and vice versa (Leary et al., 2006). Similarly, people can feel rejected by groups that they do not even desire membership in, such as the Ku Klux Klan (Gonsalkorale & Williams, 2007). Finally, the observation that very few moderators influence the effects of ostracism manipulations on felt rejection (Williams, 2007) can also be explained by the high sensitivity of this system. Thus, rejection does not have to involve any concrete threats to one's chronic sources of belonging; a situational trigger is sufficient to make someone feel rejected (or accepted).

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The emotional reactions that are triggered by deviance in a group are likely to influence the deviant's sense of belonging. Specifically, it is likely that angry reactions will lead the deviant to feel more rejected, whereas happy reactions will lead the deviant to feel more accepted. These associations follow from various pieces of converging evidence. Anger is typically expressed when people want to change other people's behavior (Averill, 1982; Fischer & Roseman, 2007), thereby implying that this behavior, and by extension the person, is not acceptable. Furthermore, as explained above, anger characterizes the inclusive reactions to deviance, and often precedes exclusion (Orcutt, 1973; Schachter, 1951). Thus, expressions of anger may signal that rejection is imminent. Happiness, on the other hand, is typically expressed in affiliative contexts (Kraut & Johnston, 1979), and the expression of happiness is typically interpreted as signaling an affiliative intention (DeWall, Maner & Rouby, 2009; Fridlund, 1994; U. Hess, Blairy, & Kleck, 2000; Knutson, 1996). A more extended version of this rationale will be developed in Chapters 2 and 4 in this dissertation.

It should be noted that my focus on anger and happiness does not necessarily imply that these are the only emotional expressions that may impact on the deviant's sense of acceptance. Although I have compared the effects of happy and angry expressions to various other emotional expressions in this dissertation (e.g., disappointment, fear, and sadness) – and consistently find that anger has a stronger impact on felt rejection than any of these other emotions – it is very well possible that several other expressions (e.g., disgust and contempt) can also impact the deviant's sense of belonging. My focus on anger and happiness, however, reflects that these appear to be the most relevant emotions in this context (Festinger, 1950; see the foregoing review of conformity and deviance). I will briefly return to this issue in Chapter 5, focusing on the differences and similarities between anger and contempt.

Emotional Reactions, Rejection, and Conformity

The experience of rejection has often been found to trigger anti-social and aggressive behavior. Such anti-social behavior is typically interpreted as an attempt to restore the need for control, and appears to be the 'default' consequence in many circumstances (for reviews, see Leary et al., 2006; Smart Richman & Leary, 2009; Williams, 2007; 2009). Leary, Kowalski, Smith, and Phillips (2003) provide the most dramatic example of this link between rejection and antisocial behavior. They found that in 13 out of 15 school shootings in the United States of America, the perpetrator was socially isolated among peers. The rejection-antisociality link has also been firmly established in lab studies. For instance, rejection has been shown to lead to increases in self-reported anti-social intentions (Buckley, Winkel, & Leary, 2004), serving bigger portions of hot sauce for a taste test (e.g., Ayduk, Gyurak, & Luerssen, 2008; DeWall, Twenge, Bushman, Im, & Williams, 2010; Wesselmann, Butler, Williams, & Pickett, 2010), administering longer and louder sound blasts when a 'learner'

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makes errors in a word-learning task (Twenge, Baumeister, Tice, & Stucke, 2001), more negative evaluations of the rejecter's and neutral people's work (Twenge et al., 2001), decreases in prosocial behavior such as volunteering for further lab experiments (Twenge et al., 2007), and derogation of the rejecters (Bourgeois & Leary, 2001). Finally, longitudinal research with children indicates that teacher-reported rejection at T1 is associated with less cooperation and higher aggression at T2, two years later (Stenseng, Belky, Skalicka, & Wichstrøm, 2014).

Despite this strong focus on anti-social consequences of rejection, there is also some evidence that this anti-social tendency can be overcome. When rejection leads to pro-social behavior, the behavior is interpreted as an attempt to restore the need to belong. Pro-social effects of rejection have primarily been demonstrated in the context of connecting to 'new' people, that is, different people than the rejecters. For instance, social exclusion has been shown to lead to more positive impressions of unfamiliar people and to a greater interest in making new friends (Maner, DeWall, Baumeister, & Schaller, 2007). Similarly, ostracism has been found to increase conformity to a new group (Williams, Cheung & Choi, 2000) and to heighten susceptibility to social influence strategies such as the foot-in-the-door technique (Carter-Sowell, Chen, and Williams, 2008). Other research has shown that rejected individuals are more willing to participate in political activities on behalf of a new in-group, relative to an out-group (Knapton, Bäck, & Bäck, 2014), which also suggests an attempt to 'fit in' with a new group. Finally, there is also evidence that rejection can promote prosocial behavior in relation to the sources of exclusion, such as ingratiation when this serves to reaffirm one's identity (e.g., Matschke & Sassenberg, 2000; Romero-Canyas et al., 2010), but this evidence is scarce.

The preceding discussion suggests that emotional reactions, and specifically angry reactions, have the potential to influence the deviant's level of conformity because they influence rejection. As argued above, conformity helps effective group functioning, and contextual factors that promote pro-social responses in response to rejection may therefore be expected to increase the likelihood of conformity after angry reactions. Further deviance (i.e., non-conformity), on the other hand, hinders group functioning, and may be expected in response to angry reactions when the context is conducive to anti-social behavior. But when is conformity more likely, and when is non-conformity more likely? I propose that two classes of moderators determine when angry reactions may increase conformity: (1) the concern for reacceptance by the rejecting group and (2) the instrumentality of conformity.

Moderators

The first of these moderators, the desire for reacceptance, represents the degree to which the deviant is motivated to remain a member in the group (e.g., Matschke & Sassenberg, 2010), as well as whether reacceptance is needed to remain a member in the group. Simply put, angry reactions are more likely to lead to conformity to the

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extent that the deviant is concerned with being reaccepted. This concern may be the result of attraction to the group, which may come from factors such as identification (David & Turner, 2001) or similarity to the group, as this produces attraction and liking (e.g., Byrne, 1961; Montoya et al., 2008; see also Festinger, 1950). Research has shown that people indeed conform more to groups they value (Dittes & Kelly, 1956), and people conform more to ingroups than to outgroups (Wilder, 1990). Another factor that influences the concern for reacceptance is the availability of alternative groups. Because switching to a different group may provide an alternative way of restoring belonging, individuals to whom membership in alternative groups is available should be less concerned with reacceptance in their current group. The deviant's status in the group may similarly influence the concern for reacceptance. For instance, prototypical members possess more traits and features that are characteristic of the group than peripheral members (Hogg, 2005). As a result, they may be said to embody the group to a greater extent than peripheral members, which means that it is more difficult to exclude a prototypical member from group membership than a peripheral member. This explains why prototypical group members are less concerned about their group membership than peripheral members (e.g., Jetten et al., 2006; Pickett & Brewer, 2004; Van Kleef, Steinel, Van Knippenberg, Hogg, & Svensson, 2007), and implies that they should also be less concerned about being reaccepted after receiving angry reactions to their deviance than peripheral group members.

The second of these factors is whether conformity is instrumental in seeking reacceptance. It has been theorized that rejection more generally may trigger relationship-promoting responses if this behavior can be assumed to repair an existing relationship, or elicit appreciation and liking from a new audience (Smart Richman & Leary, 2009). For conformity to be a viable way of seeking reacceptance in the group, the situation needs to be structured in a way that allows the group to observe the change in behavior. The role of public versus private responding has received much attention in conformity research, and shows that conformity is, on average, more likely when responses need to be made in public than in private (Cialdini & Tost, 1998; Insko et al., 1985). Different influence processes are thought to underlie public and private conformity (Insko, Smith, Alicke, Wade, & Tayloer, 1985). Private conformity is assumed to reflect informational influence, whereas public conformity is caused by both informational and normative influence (Bond, 2005; Deutsch & Gerard, 1955; Dittes & Kelly, 1956; Quinn & Schlenker, 2002). Like rejection, normative influence reflects relationship concerns. Thus, the same logic applies to conformity that is motivated by rejection: It may only be found when responses are made publicly rather than privately (in which case the motive for retaliation may prevail and fuel anti-conformity instead). Another factor that influences the perceived instrumentality of conformity is whether the deviant believes that the group will appreciate conformity. This is determined by factors such as the cooperativeness of the situation. As discussed above, deviance frustrates cooperation, whereas conformity

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facilitates cooperation (Festinger, 1950). Thus, it is likely that conformity will be more appreciated in a cooperative context than in a competitive context. In line with this idea, conformity has been found to be more likely to the extent that interdependence is perceived among group members (Berkowitz, 1957).

Overview of Chapters

The three empirical chapters in my dissertation each test different parts of the preceding theory. In Chapter 2, I focus on the relation between specific emotional expressions and specific degrees of acceptance and rejection. I use the Affect Misattribution Paradigm (Payne, Cheng, Govorun, & Stewart, 2005) to measure implicit associations between various facial expressions and different conceptualizations of acceptance and rejection. Using a meta-analysis to synthesize the results from six studies, I test whether happy facial expressions are more strongly associated with acceptance than other facial expressions, and whether angry facial expressions are more strongly associated with rejection than other (negative) facial expressions.

In Chapter 3, I investigate how multiple emotional reactions to deviance combine to influence the deviant's felt rejection, as well as the subsequent effects on conformity. Using a simulated interaction paradigm, I create a situation in which participants occupy a deviant position in a group, and systematically vary the number of angry reactions to this deviance. In Study 3.1, I also vary the size of the majority, and test whether the number of angry reactions directly determines felt rejection, independent of the size of the majority, and whether these reactions increase conformity. In Study 3.2, I vary whether responses are made publicly or privately (which determines the instrumentality of conformity) and test whether angry reactions increase conformity under public responding conditions, but not under private responding conditions.

In Chapter 4, I focus on the operation of the two proposed moderators of the effect of angry reactions on conformity. In a series of experiments, using various methodologies and operationalizations ranging from scenario studies to real interacting groups, I investigate the moderating role of the availability of alternatives (Study 4.2), the cooperativeness versus competitiveness of the situation (Study 4.3) and the prototypicality versus peripherality of the deviant (Study 4.5) in determining the association between experienced rejection and conformity. I test whether angry reactions do indeed lead to greater conformity than happy reactions if the context is conducive to conformity, that is, when the deviant can be expected to be concerned with reacceptance and when conformity is instrumental for eliciting reacceptance.

Finally, in Chapter 5, the General Discussion, I summarize the main findings from the empirical chapters, and I present an integrated model that summarizes and extends the theory based on these findings. I discuss the implications of considering emotional

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reactions as signals of rejection and acceptance, and the implications for theorizing about social functions of emotions in groups and in general. Furthermore, I discuss the applicability of these findings across contexts, and highlight a number of outstanding issues that may be addressed in future research.

The empirical chapters (Chapter 2, 3, and 4) are each based on standalone research articles, and can therefore be read independently. As a result, there is a degree of theoretical overlap between these chapters. These articles are the result of collaboration with my advisors, which is reflected in the use of the plural 'we' in these chapters.

CHAPTER TWO

EMOTIONAL EXPRESSIONS AS SOCIAL SIGNALS OF ACCEPTANCE AND REJECTION

This chapter is based on Heerdink, M. W., van Kleef, G. A., Homan, A. C., & Fischer, A. H. (2015). Emotional expressions as social signals of rejection and acceptance: Evidence from the Affect Misattribution Paradigm. *Journal of Experimental Social Psychology*, *56*, 60–68.

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Given the evolutionary significance of group life (Cosmides & Tooby, 1992; Dunbar, 1992), it would be adaptive for human beings to be sensitive to moment-to-moment variations in the extent to which fellow group members accept them (Baumeister & Leary, 1995). But how do people gauge their level of acceptance? Adopting a social-functional approach to emotion (Fischer & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Van Kleef, 2009), we propose that individuals use the emotional expressions of others as implicit signals of acceptance versus rejection. Emotional expressions inform observers about a person's specific evaluation of a situation, and they communicate social motives and behavioral intentions (Fridlund, 1994; Hess & Fischer, 2013; Knutson, 1996). Thus, different emotional expressions – even two different negative emotional expressions – may have different implications for an observer's relation to the group. Here, we aim to show that different emotional expressions signal different degrees of acceptance and rejection. We develop and test the hypotheses that (i) angry facial expressions are more strongly associated with rejection than other (negative) facial expressions, and that (ii) happy facial expressions are more strongly associated with acceptance than other facial expressions. Furthermore, we test whether these associations may be found even when facial expressions are presented for very short durations.

The social-functional approach to emotions posits that emotional expressions play a vital role in regulating social life (Keltner & Haidt, 1999). These social functions are typically investigated by studying the *consequences* of emotional expressions for (social) behavior within a particular context. Research into such social consequences indicates that the effects of any given emotional expression may differ considerably depending on the social context, the individual's resources, and which type of consequences are investigated. This can be illustrated by the case of anger: Some research has documented destructive consequences of anger expressions, such as lowered relationship satisfaction and increased conflict in romantic relationships (Sanford & Rowatt, 2004), an increased likelihood of divorce (Gottman & Levenson, 2002), and retaliation and impasses in conflict resolution (Friedman et al., 2004; Kopelman, Rosette, & Thompson, 2006; Van Kleef & Côté, 2007). However, other research has documented favorable outcomes of anger expressions, such as greater concessions from counterparts in negotiations (Van Kleef, De Dreu, & Manstead, 2004), increased effort and task performance of subordinates (Sy, Côté, & Saavedra, 2005; Van Kleef, Homan, Beersma, & Van Knippenberg, 2010), increased conformity of deviant group members (Heerdink, Van Kleef, Homan, & Fischer, 2013), enhanced learning performance of students (Van Doorn, Van Kleef, & Van der Pligt, 2014), and long-term improvement of intimate relationships (Fischer & Roseman, 2007).

Findings regarding the social consequences of other emotions are similarly mixed. For instance, some studies indicate that expressions of happiness increase affiliative and cooperative tendencies among observers, especially in communal relationships

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(Clark, Pataki, & Carver, 1996). Other studies, however, suggest that expressions of happiness evoke exploitation, especially in competitive settings (for a review of this literature, see Van Kleef, De Dreu, & Manstead, 2010). Furthermore, sad and fearful expressions have been found to increase affiliation and helping (Barnett, Howard, Melton, & Dino, 1982; Clark & Taraban, 1991; Clark, Oullette, Powell, & Milberg, 1987; Yee & Greenberg, 1998), especially in communal relationships (Clark et al., 1996). However, other research has shown that people tend to avoid interactions with (chronically) sad individuals when possible, because such interactions tend to be draining and not socially rewarding (e.g., Coyne, 1976).

To better understand how the same emotional expression may have both positive and negative social consequences, we believe it is useful to draw a distinction between short-term, immediate *signals* conveyed by emotional expressions, and the longer-term *consequences* of expressing an emotion. In this view, emotional expressions convey elemental social signals to an observer that are relatively stable across situations (Fridlund, 1994). How these social signals affect an observer (i.e., their consequences) does not only depend on the social signal itself, but also on contextual factors that determine the relevance of a particular social signal to one's current goals. Focusing on the social signals conveyed by emotional expressions thus also helps us gain an understanding of the type of contextual factors that may be relevant in determining the consequences of a particular emotional expression. Our focus here is on social signals of acceptance versus rejection, as this constitutes a key dimension of social life.

Emotional Expressions as Signals of Acceptance and Rejection

Acceptance and rejection may be seen as the extremes of a bipolar dimension that represents one's level of acceptance. To be accepted is a fundamental human need (Baumeister & Leary, 1995), and accordingly experiences that negatively affect one's level of acceptance have a great impact on people. For instance, research has shown that feeling rejected is a highly aversive experience (Williams, 2007), with a neural activation pattern similar to physical pain (Eisenberger & Lieberman, 2004). Rejection can be a strong motivator of both antisocial behavior (Wesselmann, Butler, Williams, & Pickett, 2010; Williams, 2007) and behavior aimed at regaining acceptance such as ingratiation (Romero-Canyas et al., 2010) and conformity (Heerdink et al., 2013). At the other end of the dimension, acceptance can be conceptualized as a state of increased (social) safety that facilitates development and self-expression (Heerdink et al., 2013; Ryan & Deci, 2000).

Our hypotheses focus on two prevalent emotion displays that we believe to be highly consequential for an observer's position in the group: anger and happiness. The expression of happiness is typically associated with affiliative social motives (Fischer & Manstead, 2008; Fridlund, 1994). People with an intention to affiliate smile more (Clark, Pataki, & Carver, 1996; Kraut & Johnston, 1979), and those who smile are also perceived as having affiliative intentions (Hess, Blairy, & Kleck, 2000; Knutson,

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1996). In terms of consequences, happiness has been theorized to improve social bonds (Fischer & Manstead, 2008). We therefore predict that happy expressions are interpreted as signals of acceptance.

Anger, on the other hand, is an emotion that is often linked to antisocial behavior and aggression (Averill, 1982). People express anger when they intend to change another person's behavior (Fischer & Roseman, 2008), thereby signaling that certain behavior is unacceptable. The expression of anger in close relationships is predictive of short-term divorce (Gottman & Levenson, 2002), and it is related to both decreased relationship satisfaction and increased conflict (Sanford & Rowatt, 2004). Yet, Fischer and Roseman (2007) found that anger can also be effective in eliciting behavioral change (see also Heerdink et al., 2013). These social consequences of angry expressions align with the effects of social rejection described above. We therefore propose that angry expressions may be seen as signaling a (temporary) problem in the relationship between people, and we predict that angry expressions are interpreted as signals of rejection.

Like happy expressions, sad and fearful expressions have also been found in some studies to increase affiliation, particularly in communal relationships (Clark et al., 1996). However, these social consequences are typically attributed to these emotional expressions signaling a need for help (Clark et al., 1996), rather than signaling acceptance. Thus, although the social consequences of sadness and fear may partially overlap with those of happiness in some cases, we argue that these expressions convey different social signals (i.e., a need for help vs. acceptance, respectively). We therefore expect happy and angry expressions to be stronger signals of acceptance and rejection than fearful and sad expressions.

If expressions of happiness and anger are indeed robust signals of acceptance versus rejection, these associations may be expected to generalize to other conceptualizations of the acceptance/rejection dimension. Williams and Bargh (2008) suggest that acceptance and rejection are grounded on the experiences of warmth and coldness, respectively (see also Zhong & Leonardelli, 2008). Warmth is the first dimension on which people judge others (Fiske, Cuddy, & Glick, 2007), which is consistent with the possibility that signs of acceptance versus rejection can be quickly gleaned from others' nonverbal behavior. Similarly, it has been argued that social distance shares a conceptual basis with other kinds of distances (e.g., spatial; temporal; Trope & Liberman, 2010; see also IJzerman & Semin, 2009). It follows that acceptance and rejection are linked to closeness and distance as well.

Based on these theoretical considerations, we formulated two hypotheses: Happy facial expressions are associated with acceptance to a greater extent than other facial expressions (*Hypothesis 1*); and angry facial expressions are associated with rejection to a greater extent than other negative emotional facial expressions (*Hypothesis 2*). We further examined to what extent these associations generalize across various

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conceptualizations of acceptance versus rejection (i.e., accept/reject, warm/cold, or close/distant). If the predicted effects are robust, we should find that the associations emerge irrespective of the particular conceptualization of acceptance versus rejection.

The Affect Misattribution Paradigm

To test whether facial expressions are indeed associated with rejection and acceptance, we conducted a series of six experiments using the Affect Misattribution Paradigm (AMP; Payne, Cheng, Govorun, & Stewart, 2005). The AMP measures implicit associations by assessing the extent to which primes influence responses to subsequently presented Chinese ideograms. Given that we used acceptance/rejection instead of the positive/negative judgments that were used in the original AMP, our version of the AMP was similar to semantic variants of the task, in which the primes activate conceptual knowledge that is subsequently misattributed to the ideograms (e.g., Blaison et al., 2012; Gawronski & Ye, 2014).

The advantage of using the AMP is that it yields reliable results that are relatively unaffected by metacognitive strategies (e.g., hypothesis guessing; Payne et al., 2005). Because emotional expressions are rich and complex stimuli that may trigger a number of different processes in observers (e.g., Hareli & Hess, 2010; Van Kleef, 2009), this feature helped us exclude the influence of explicit strategies and processes that might interfere with the participants' primary associations when perceiving facial expressions in real-world situations. Using the AMP thus allowed us to assess the associations between facial expressions and acceptance/rejection in a relatively unbiased way.

In our experiments, we manipulated the facial expressions and the conceptualization of the acceptance/rejection dimension. In addition, we exploratively varied the presentation time of the facial expressions (i.e., prime duration) to see which presentation durations produce reliable effects. We tested the four shortest presentation times allowed by our equipment (ranging from 17ms to 67ms). The initial experiments were intended to explore the influence of various combinations of response dimension and prime duration. As our insights progressed, our experiments increasingly focused on confirming these explorations and testing our specific hypotheses.

The results of the experiments are analyzed and reported as a meta-analysis. This strategy was chosen because the procedures of the six experiments were largely identical, and writing them up as separate studies would entail considerable repetition. Furthermore, the meta-analytic report as a whole provides a more reliable, more complete, and more general picture than each of the studies in isolation, and the greater quantity of data included in the meta-analysis provides the statistical power needed to obtain reliable estimates of the effect sizes.

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Method

The six experiments that were conducted to test our hypotheses shared a mixed Response Dimension x Prime Duration x Facial Expression design, in which Response Dimension and Prime Duration were manipulated as between-subjects factors and Facial Expression was manipulated as a within-subjects factor.¹ The exact levels of Response Dimension, Prime Duration, and the Facial Expressions that were included in each of the six experiments are displayed in Table 2.1.

Table 2.1: Conditions included in each experiment

Experiment	Response Dimension			Prime Durations (ms)				Facial Expressions				
	A-R	C-D	W-C	17	33	50	67	Neutral	Happy	Angry	Fearful	Sad
Experiment 2.1	X			X				X	X	X	X	X
Experiment 2.2			X	X		X		X	X	X	X	X
Experiment 2.3		X	X	X	X	X		X	X	X	X	X
Experiment 2.4	X	X				X	X	X	X	X	X	
Experiment 2.5	X					X	X	X	X	X		X
Experiment 2.6	X		X			X	X	X	X	X	X	

Note: A-R = Accept-Reject; C-D = Close-Distant; W-C = Warm-Cold. Response Dimension and Prime Durations were manipulated as Between-Subjects factors; Facial Expressions were manipulated as Within-Subjects factors. Each experiment had a Response Dimension x Prime Duration x Facial Expression full factorial design.

Procedure

Participants were seated individually in cubicles. The set-up of the cubicles ensured that the top of the computer screen was approximately aligned with the participant's eyes. Participants received either monetary compensation or course credit.

Affect Misattribution Paradigm (AMP)

The task used in the experiments was procedurally similar to the AMP as originally introduced by Payne et al. (2005). In a number of trials, the participant's task was to 'intuitively judge' the meaning of Chinese ideograms, and to press one of two keys to indicate which of two alternatives best represented the meaning of the ideogram. These Chinese ideograms were preceded by primes of different facial expressions. To

¹ A seventh experiment, that was conducted between Experiments 2.3 and 2.4, was omitted from this article. This experiment was identical to Experiment 2.3, except that it manipulated prime duration as a within-subjects factor. Because the within-subject design violated the assumption of independent effect sizes that was needed for meta-analytic comparison with the other studies (see explanation under Analytic Strategy), we could not include this experiment in the meta analysis.

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test our hypotheses, we examined how the facial expression primes influenced participants' responses. Depending on the response dimension condition, the response alternatives were acceptance/rejection, warm/cold, or close/distant. Using these conceptual response dimensions made our task more similar to semantic variants of the task (e.g., Blaison et al., 2012) than to the original, affective AMP as introduced by Payne and colleagues (2005). Besides tapping into acceptance versus rejection, these word pairs vary on a valence dimension. Thus, depending on the pattern of findings, effects could potentially be interpreted in terms of valence. In order to allow us to judge our findings in relation to a valence explanation, we collected valence ratings for the three word pairs in a separate study (described in Appendix A). The results indicated that the word pairs differ considerably in the extent to which they represent positive versus negative valence (accept/reject is more strongly valenced than are warm/cold and close/distant). We return to this issue in the Discussion.

The instructions emphasized that there was no objectively 'right' answer in the task, and made no mention of response speed. Thus, a speed/accuracy trade-off explanation is unlikely to account for the results described below (see also the null findings with regard to response latencies, described under Auxiliary Analyses below).

Participants were presented with 20 trials in each facial expression condition (80-100 trials in total, depending on the facial expressions included in the study; see Table 2.1). Trials were presented in two blocks, each containing half of the trials. There was a short break between the blocks.

Each trial began with a facial expression prime, presented for 17, 33, 50, or 67 ms (depending on study and condition). These prime durations represent 1 to 4 screen refresh cycles on the 60 Hz computer monitor that was used (1/60th to 4/60th of a second). The facial expressions were immediately followed by a Chinese ideogram that was randomly selected from a set of 100 unique ideograms. After 150ms, this ideogram was replaced by a mask consisting of noise that remained on screen until a response was given. Participants then pressed a key on the keyboard ([C] or [M]) to indicate whether they thought this ideogram represented a word related to rejection (i.e., rejection, cold, or distant, depending on study and condition), or whether it represented a word related to acceptance (i.e., acceptance, warm, or close). The meaning of these two keys was counterbalanced between participants.

Primes

The images used as primes were taken from the Amsterdam Dynamic Facial Expression Set (ADFES; van der Schalk, Hawk, Fischer, & Doosje, 2011). Ten different individuals were selected, five male (numbers 1, 2, 3, 5 and 6), and five female (1, 2, 3, 4, and 5), each posing five different facial expressions (neutral, happy, angry, sad, or fearful). With regard to the valence of the expressions, the ADFES validation study indicates that the happy facial expressions ($M = 5.88$ on a 7-point

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scale) were rated as more positive than the angry ($M = 2.45$), fearful, ($M = 2.37$), and sad ($M = 2.28$) facial expressions (van der Schalk et al., 2011, Table 2). Fearful facial expressions did not differ in valence from either the angry or sad facial expressions, but angry facial expressions were rated as significantly more positive (i.e., less negative) than sad facial expressions. (No valence ratings were reported for the neutral expressions.) We desaturated the images (to make them black-and-white), slightly blurred and cropped them to remove distracting features (e.g., hair, ears), and resized them to 160x240 pixels. Example images are displayed in Figure 2.1.



Figure 2.1: Example pictures from the ADFES (van der Schalk et al., 2011). From left to right: Neutral, Happy, Angry, Fearful, and Sad facial expression.

Results

Analytic Strategy

A two-stage meta-analysis (Simmonds et al., 2005) was conducted to assess the overall effects of the facial expression primes and the impact of the response dimension and prime duration manipulations on the responses given by participants. In the first stage, effect sizes were estimated for each unique between-subjects condition within each study. This means that, for instance, two sets of effect sizes were obtained from Experiment 2.2, which had a 1 (Response Dimension: Warm-Cold) x 2 (Prime Duration: 17ms vs. 50ms) between-subjects design: Warm-Cold x 17ms; and Warm-Cold x 50ms. Slicing up the data in this fashion resulted in a total of 19 datasets, which were treated as separate experiments. This approach is recommended when the effect sizes from one study can be assumed to be independent (Borenstein, Hedges, Higgins, & Rothstein, 2010). This assumption was met because between-subjects manipulation of the moderators of interest ensured that each participant contributed to only one of the effect sizes obtained from a study. Other potential sources of effect size dependency, such as the location and the experimenter, were constant across all experiments, making it unlikely that any two conditions from the same experiment would be more related than two conditions from different

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experiments. In the second stage of the meta-analysis, the effect sizes obtained from the first stage were aggregated, and the overall impact of the moderators was assessed.

To obtain the effect size estimates in the first phase, mixed-effect logistic regression models were fitted to the individual conditions using the *lme4* package (version 0.999999.2; Bates, Maechler, & Bolker, 2013) for R (version 3.0.1; R Core Team, 2013). A random intercept for participant was specified. The model estimated the following planned contrasts: 1) between the Happiness condition (-1) and the four other conditions (each coded as 1/4); 2) between the Anger (1) and Fear/Sad conditions (each coded as -1/2); 3) between the Neutral (-1) and the three negative emotional conditions (each coded as 1/3); and 4) between the Fear (-1) and Sad (1) conditions. In those studies that omitted either the Fear, or the Sad condition (see Table 2.1), only the first three contrasts were fitted, and the contrast weights were adjusted (e.g., in contrast 1, all conditions except Happiness received weights of 1/3 instead of 1/4). Note that contrasts 3 and 4 were specified in this way to obtain an orthogonal set of contrasts. Although no hypotheses were formulated about these contrasts, the fact that they are part of the same model (and therefore adjusted for while estimating contrasts 1 and 2) necessitates us to report them in order to provide a complete picture of the results.

In the second stage of the meta-analysis, a random-effects meta-analytic model was fit to the regression coefficients and standard deviations obtained from the first step using the *metafor* package (version 1.9.1; Viechtbauer, 2010) for R.² Using the random-effects model instead of a traditional fixed-effects model has the advantage that heterogeneity among effect sizes is allowed, thereby reducing the influence of any within-experiment dependency of effect sizes. The results of the meta-analysis are reported as Odds Ratios (ORs), followed by the associated 95% confidence intervals. Conventional p-values are also reported where applicable.

Note on Figures

To ensure correct interpretation of the figures (forest plots), some explanation is in order. The figures are divided in two parts. The top part contains the results for each of the individual datasets for which an effect size was estimated. The label (left column, e.g., 'Accept/reject 17ms (exp 1)') indicates the response dimension (acceptance/rejection) and prime duration (17ms) condition, and the experiment that this dataset originates from (Experiment 1). The right column presents the effect sizes (ORs) and their 95% confidence intervals numerically. In the center, these effect sizes and confidence intervals are graphically presented relative to a reference line set at an OR of 1 (which indicates no difference). Larger blocks denote that the dataset contained more participants, and therefore received more weight in the meta-analysis.

² This approach was recommended by the author of the meta-analytic software package that was used.

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Finally, the bottom part presents the meta-analytic summary. If there is no moderation, the overall ‘Main effect’ is presented; if there is moderation, the summary is split out for each level of the moderator.

Table 2.2: Percentage trimmed trials, number of excluded participants per criterion, and remaining sample for each experiment

Experiment	Excluded Participants			Outliers		Final Sample			
	<i>N</i>	Read Chinese	One Key	Trimmed %	Excluded <i>N</i>	Men	Women	<i>M</i> _{age}	Age Range
Experiment 1	51	0	1	1.96%	3	14	33	21.77	18–40
Experiment 2*	56	3	0	1.53%	2	16	34	21.44	18–51
Experiment 3	70	2	1	1.24%	1	17	49	22.14	18–64
Experiment 4	93	2	0	1.56%	3	16	72	21.02	18–28
Experiment 5	123	2	0	1.65%	4	30	87	21.19	18–40
Experiment 6	75	2	0	1.79%	3	20	50	21.56	18–56

Note: Read Chinese = participant could read Chinese; One Key = one response key used in >90% of the trials; Outliers-Trimmed = responses with log(latencies) more/less than 3 SDs different from the within-experiment, within-condition mean; Outliers-Excluded: participants with more than 10% missing responses after trimming outliers.

* No demographic information was available for 1 participant.

Participants and Data Cleaning

Table 2.2 summarizes the total number of participants in each experiment, and the results of the following checks that ensured data quality. First, participants were excluded from the sample if they could read Chinese, or if they used one of the two response keys in over 90% of the trials. Then, outliers were identified by first determining the distribution of log latencies in each condition within each experiment, and then removing responses with log latencies that deviated more than three standard deviations from the mean log latency in the condition. Finally, participants whose responses were outliers in more than 10% of the cases were dropped from the sample. Without dropping outliers, the analyses produce similar

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effect estimates as reported below, but with wider confidence intervals. Significant effects remain significant, with the exception of contrast 2, which becomes marginal.

Hypothesis 1: Happy Facial Expressions and Acceptance

According to our first hypothesis, happy facial expressions should be more strongly associated with acceptance than other facial expressions. For this hypothesis to be supported, the first contrast should show an *OR* smaller than 1, which indicates that the likelihood of a rejection-related response is lower (i.e., the likelihood of the opposite acceptance-related response is greater) after a happy facial expression prime than after another facial expression prime. An initial random-effects model without any moderators showed the predicted effect, $OR = 0.735 [0.648, 0.835]$, $p < .001$. Remaining heterogeneity ($Q_w[18] = 204.17$, $p < .001$) suggested potential moderators, however, so we examined the influence of both response dimension and prime duration. The impact of response dimension on the contrast between happy and other facial expressions was found to be marginally significant, $Q_{\text{dimension}}(2) = 5.80$, $p = .055$. Exploring the pattern of moderation indicated that the contrast between happy and other facial expressions was slightly more pronounced for the accept/reject response dimension ($OR = 0.622 [0.516; 0.750]$) than for the warm/cold ($OR = 0.769 [0.635; 0.933]$) or close/distant ($OR = 0.887 [0.704; 1.118]$) response dimensions. Because of the weak evidence for moderation, and because the simple effect was in the predicted direction for each response dimension, we did not consider the influence of response dimension further.

For prime duration, on the other hand, we found much stronger evidence that it affected the relative likelihood of rejection responses after happy facial expression primes compared to other facial expressions, $Q_{\text{prime}}(3) = 33.96$, $p < .001$. The results of this analysis (summarized in the bottom part of Figure 2.2) indicate that happy facial expressions did not affect the likelihood of a rejection response at prime durations of 17ms ($OR = 1.004 [0.847, 1.190]$) and 33ms ($OR = 1.131 [0.868, 1.473]$), but the hypothesized decrease in likelihood of a rejection-related responses for happy, relative to other facial expressions was found at prime durations of 50ms ($OR = 0.620 [0.551, 0.698]$) and 67ms ($OR = 0.647 [0.559, 0.748]$). Accordingly, inclusion of prime duration as a moderator decreased the observed heterogeneity, although not to non-significance: $Q_w(15) = 56.65$, $p < .001$. In sum, our first hypothesis, that happy facial expressions would be more strongly associated with acceptance than other facial expressions, was supported for prime durations of 50ms and up.

Happy versus Other Facial Expressions

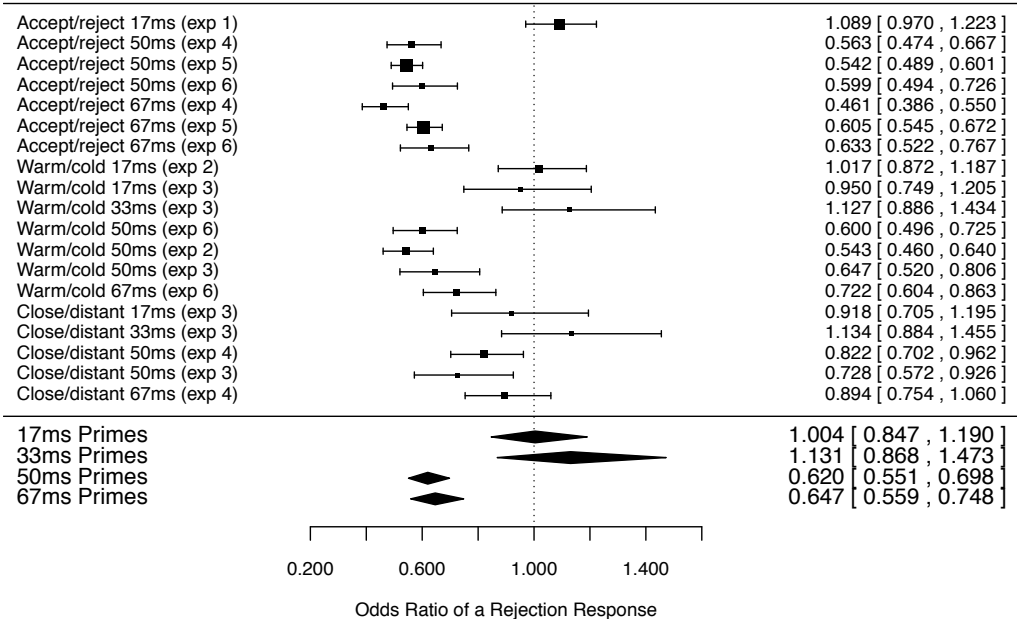


Figure 2.2: Forest plot of Odds Ratios for the contrast between Happy versus Neutral, Angry, Fearful, and Sad facial expressions and a meta-analytic summary.

Hypothesis 2: Angry Facial Expressions and Rejection

Our second hypothesis was that anger would be more strongly associated with rejection than other negative facial expressions. For this hypothesis to be corroborated, the *OR* of the second contrast should be higher than 1, which indicates that the likelihood of a rejection-related response is greater after angry facial expression primes than after sad and fearful facial expression primes. The initial random-effects without moderators showed the predicted effect (see Figure 2.3 for a summary) to be small but reliable, $OR = 1.033 [1.001, 1.066]$, $p = .043$. There was little evidence of heterogeneity among the effect sizes ($Q_w[18] = 8.96$, $p = .961$), which suggests that the effects were comparable across conditions. Thus, no further moderation analyses were conducted. In sum, our second hypothesis, that angry facial expressions would be more strongly associated with rejection than other negative facial expressions, was supported.

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Angry versus Fearful and Sad Facial Expressions

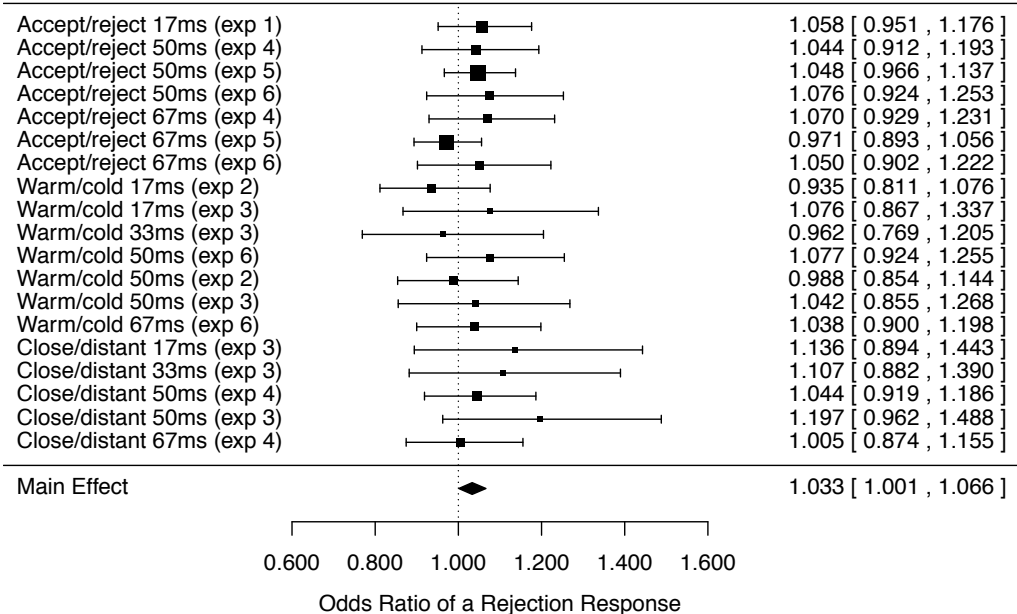


Figure 2.3. Forest plot of Odds Ratios for the contrast between Angry versus Fearful and Sad facial expressions and the meta-analytic summary.

Remaining Contrasts

The final two contrasts that were specified in the models were also subjected to the meta-analytic procedure. Note that no hypotheses were specified for these contrasts. They are reported to provide a complete picture of the results. The relevant forest plots are available as supplementary materials online.³

The third contrast tested all negative emotional facial expressions (i.e., angry, fearful, and sad facial expressions) against neutral facial expressions. A model without moderators indicated that negative emotional facial expressions increased the likelihood of a rejection response relative to neutral facial expressions, $OR = 1.073$ [1.019, 1.129], $p = .007$. There was substantial heterogeneity among effect sizes, $Q_v(18) = 33.74$, $p = .014$. Only prime duration significantly moderated the contrast, $Q_{prime}(3) = 18.46$, $p < .001$. No effects were found at prime durations of 17ms ($OR = 0.968$ [0.894, 1.048]) and 33ms ($OR = 0.875$ [0.740, 1.035]). At prime durations of

³ <http://dx.doi.org/10.1016/j.jesp.2014.09.004>

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50ms ($OR = 1.125 [1.067, 1.187]$) and 67ms ($OR = 1.140 [1.071, 1.214]$), however, negative facial expressions increased the likelihood of rejection-related responses compared to neutral facial expressions. The remaining heterogeneity was non-significant, $Q_w(15) = 15.28, p = .431$.

The results for the fourth contrast did not show a difference between the likelihood of a rejection-related response after sad facial expressions, compared to fearful facial expressions ($OR = 1.013 [0.953, 1.077], p = .669$), with little evidence of heterogeneity among effect sizes ($Q_w[8] = 9.91, p = .272$).

Auxiliary Analyses

In addition to these hypotheses tests, we explored whether the effects described above were moderated by participant sex. We found that it did not moderate any of the contrasts. Then, we explored whether response latencies were affected by the facial expression primes, by running the same analyses as described above, but substituting response for response latency as the dependent variable. Happy facial expressions were responded to slightly faster than all other facial expressions ($\beta = -0.019 [-0.037, -0.002]$), but no other differences were found. We are reluctant to interpret this effect, because it is small and does not relate in a meaningful way to the hypotheses.

Discussion

Drawing on social-functional accounts of emotion (Fischer & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Van Kleef, 2009) and the evolutionary relevance of group life (Cosmides & Tooby, 1992; Dunbar, 1992), we developed the idea that facial emotional expressions signal different degrees of acceptance versus rejection. A meta-analysis of six studies based on the AMP (Payne et al., 2005) supported our two hypotheses: Happy facial expressions were more strongly associated with acceptance than other facial expressions, and angry facial expressions were more strongly associated with rejection than other negative facial expressions. These associations emerged reliably at prime durations of 50ms and higher, and they occurred regardless of whether the acceptance/rejection dimension was operationalized in a direct (acceptance/rejection), or indirect (warm/cold, close/distant) way. Together, these findings support the idea that observers use emotional expressions as immediate social signals regarding their own standing in the group.

The current findings have implications for theorizing on the social functions of emotions across different contexts. There is an increasing awareness that emotional expressions play a role in regulating social behavior (Keltner & Haidt, 1999) and engendering social influence (Van Kleef, Van Doorn, Heerdink, & Koning, 2011), but the ways in which such influence comes about are imperfectly understood. Our findings suggest that expressions of anger and happiness bring about social consequences in part because they emit signals of impending rejection versus

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acceptance, which may motivate behaviors aimed at securing acceptance versus self-expression and development. Viewing anger as a rejection signal thus helps to understand how the social consequences of anger may differ depending on contextual factors that determine the motivation to be reaccepted. For instance, it helps explain why angry expressions may both drive people apart by evoking aggressive tendencies (e.g., Van Kleef & Côté, 2007) and have the potential to draw people together by eliciting conformity from a deviant group member when this individual is highly dependent on the group (Heerdink et al., 2013). Furthermore, it helps explain why people are more likely to be categorized as outgroup members versus ingroup members when they express anger compared to happiness (Dunham, 2011).

Generally speaking, effects were found at presentation times of at least 50ms. Although this is a shorter prime duration than is typically used in AMP studies (typical presentation times range from 75ms up to 1500ms), this finding is interesting in the context of the ongoing discussion about mechanisms that underlie AMP effects (e.g., Blaison et al., 2012; Gawronski & Ye, 2014; Payne et al., 2005). AMP effects are thought to be produced by a combination of ‘hot’ (or affective) mechanisms, in which the primes induce affect that is subsequently misattributed to the targets (Payne et al., 2005), and ‘cold’ (or semantic) mechanisms, in which the primes induce conceptual activation that is misattributed to the target (Blaison et al., 2012). Both mechanisms may simultaneously contribute to AMP effects (Gawronski & Ye, 2014). Consequently, it is difficult to pinpoint exactly which mechanism is responsible for our effects, because affective and semantic mechanisms would produce effects in the same direction (i.e., happy expressions could lead to either *feeling* accepted or *thinking* about acceptance, and both would elicit the same response). However, one set of AMP studies pitted these mechanisms against each other (Blaison et al., 2012). In these studies, angry and fearful expressions were used as primes, and the response alternatives were ‘angry-evoking’ and ‘fear-evoking’. Angry expressions were found to increase the proportion of ‘angry-evoking’ responses relative to fearful expressions. This is more in line with a semantic explanation than with an affective explanation, because the latter would predict an increased proportion of ‘fear-evoking’ responses instead. Thus, cold mechanisms may be relatively more potent than hot mechanisms. This suggests that our effects may have been primarily driven by cold mechanisms.

If it is indeed primarily cold, conceptual activation that underlies our findings, the findings with regard to prime duration may represent a lower bound for the presentation time to elicit sufficient conceptual activation to find cold AMP effects. As the encoding of the stimulus takes place during the presentation, a minimum prime duration of 50ms may be required to allow cognitive flexibility in the encoding of facial expressions; that is, to categorize facial expressions using a contextually determined dimension (in this case, acceptance and rejection; analogous to how emotion words serve as context while categorizing facial expressions, Barrett, Linguist, & Gendron, 2007). However, as noted by an anonymous reviewer, the conclusions

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drawn from this finding should be qualified by the fact that the presentation time only represents a fraction of the total time that participants took to produce a response (mean latencies in the current studies ranged from 665ms to 962ms). Future research may test these speculations more directly.

The finding that the warm/cold response dimension produced similar results as the other response dimensions is relevant to understanding how people process other people's emotional expressions. As explained in the introduction, abstract concepts are grounded on more concrete representations, and these conceptual groundings are often revealed by linguistic metaphors. Such metaphors link rejection and acceptance to coldness and warmth (e.g., giving the cold shoulder, or being a warm person). However, metaphors about anger often link anger to higher temperatures instead (e.g., boiling with anger). Importantly, these metaphors appear to reflect the bodily *experience* of anger, as this experience is associated with higher skin temperature than neutrality and other emotions such as sadness (e.g., Nummenmaa, Glerean, Hari, & Hietanen, 2013). The finding that angry facial expressions increased the likelihood of 'cold' rather than 'warm' responses suggests that people focus on the social implications signaled by others' facial expressions before attempting to understand the emotional experience of the other person (e.g., by simulation, Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005).

It is important to consider to what extent our findings may be accounted for by alternative explanations. As indicated before, the word pairs that we used to tap into acceptance versus rejection also vary on a valence dimension, and the same is true for the emotions we examined. One might therefore argue that our findings reflect a valence effect. Indeed, the negative emotional expressions (anger, fear, sadness) were generally more strongly associated with the negative outcome (rejection) than the neutral facial expressions, which were in turn more strongly associated with the positive outcome (acceptance). A more fine-grained analysis, however, reveals that various aspects of our findings do not fit a simple valence account.

First, angry facial expressions produced more rejection-related responses than fearful and sad facial expressions. A valence-based explanation may only account for these findings if angry facial expressions are construed as more negative than fearful and sad facial expressions. Yet, these emotions are not typically differentiated in terms of negativity (Russell, 2003). Moreover, the validation data for the ADFES (as discussed in the Method section) indicate that angry facial expressions were construed as *less* negative than sad facial expressions (van der Schalk et al., 2011, p. 914) – the opposite of the pattern that would be required to produce our findings under a valence account.

Second, we found the predicted effects across three different conceptualizations of the acceptance/rejection dimension, which are not all equally clearly valenced. For instance, closeness may be either negative (when it concerns a crocodile or a foe) or

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positive (when it concerns a kitten or a friend). Indeed, the valence ratings that we collected in a separate study (see Appendix A) clearly indicate that acceptance/rejection is more explicitly valenced than warm/cold and close/distant. If valence were driving our effects, one would expect smaller effect sizes for more ambiguously valenced response options. Yet, we found that response dimension did not reliably moderate our findings,⁴ which indicates that the effect sizes were comparable between the more ambiguously valenced response dimensions (warm/cold, and especially close/distant) and the most clearly valenced response dimension (acceptance/rejection). Thus, considering that the pattern of our findings neither matches the differences in valence of the stimuli (facial expressions), nor the differences in valence of the response dimensions, we believe that our effects are better understood in terms of the specific social signals of discrete emotional expressions, consistent with social-functional accounts of emotion.

Although Contrast 1 provided strong support for Hypothesis 1, the heterogeneity among effect sizes was not completely accounted for. This may indicate that there is a systematic source of variance (i.e., a potential moderator) that is omitted from the model. Since all experiments were identical, except for the manipulations of response dimension and prime duration, there were no more study-level moderators we could test. Thus it remains unclear what may have caused these variations, and why heterogeneity was only observed for Contrast 1. Future replication may elucidate whether this heterogeneity is a spurious finding or requires further inquiry. For present purposes, heterogeneity is unlikely to have influenced our conclusions, as the random-effects meta-analytic model takes heterogeneity into account (Borenstein et al., 2010).

In this article, we have provided a minimal demonstration of the proposed social-signaling function of angry and happy expressions: angry expressions signal rejection, and happy expressions signal acceptance. Furthermore, we have shown that these social implications of facial expressions are accessible nearly instantly to an observer: 50ms and 67ms are only 1/20th, or 1/15th of a second – less than the blink of an eye (Kaneko & Sakamoto, 1999). The immediacy of these effects points to the fundamental importance of the signals conveyed by emotional expressions as regulators of social life.

⁴ Although we found marginally significant evidence for moderation of the happy vs. other facial expressions contrast by response dimension, the pattern of moderation does not meaningfully correspond to either the main hypotheses nor to an alternative account in terms of valence. Because the evidence was only marginally significant, and because we found it in only one of the four contrasts, we do not attach much weight to this moderation

CHAPTER 2

Appendix A

To compare the extent to which the three different Response Dimensions are linked to differences in valence, 53 participants (no demographic information collected) rated one (randomly selected) alternative from each of the acceptance/rejection, warm/cold, and close/distant word pairs. Thus, they completed three trials in total; the order of the word pairs was randomized. Ratings were made on a 7-point scale ($1 = \textit{negative}$, $4 = \textit{neutral}$, $7 = \textit{positive}$). Using mixed-effect regression analysis, we tested whether the difference in valence of two words within a word pair differs between word pairs (e.g., the difference in valence of ‘accept’ and ‘reject’ is smaller or greater than the difference in valence between ‘warm’ and ‘cold’). Thus, we tested the Word pair (dummy-coded, using accept/reject as the reference condition) X (acceptance- or rejection-related) Alternative interaction. Significance of the results was determined by bootstrapping (10000 resamples) using the bootME function in the lme4 package (Bates et al., 2013) for R (R Core Team, 2013).

A simple effect of Alternative indicated that within the accept/reject word pair, ‘accept’ was rated as more positive than ‘reject’, $\beta = 2.16$, 95% CI [1.90, 2.43], $p < .001$. More importantly, a significant interaction indicated that both the warm/cold ($\beta = -0.48$, 95% CI [-0.80, -0.18], $p = .003$) and close/distant word pairs ($\beta = -0.94$, 95% CI [-1.25, -0.63], $p < .001$) differed significantly less in valence than accept/reject. Follow-up analyses indicated that the differences were mainly prominent for the rejection-related words: ‘reject’ was rated as more negative ($M = 1.48$, $SD = 0.64$) than ‘cold’ ($M = 2.77$, $SD = 0.96$) and ‘distant’ ($M = 2.83$, $SD = 1.36$), both $ps < .001$. For the acceptance-related words, ‘accept’ ($M = 5.92$, $SD = 1.02$) was found to be more positive than ‘close’ ($M = 5.33$, $SD = 1.05$, $p = .041$), but not different from ‘warm’ ($M = 6.23$, $SD = 0.92$, $p = .297$). Thus, the three Response Dimensions differ in how strongly they are linked to valence.

Acknowledgements

We would like to thank Juliane Degner for sharing the materials on which these experiments were based.

CHAPTER THREE

THE MORE, THE MERRIER?

This chapter is based on Heerdink, M. W., van Kleef, G. A., Homan, A. C., & Fischer, A. H. (2015). *The more the merrier? The relation between number of angry reactions, feelings of rejection, and conformity in groups*. Manuscript submitted for publication.

CHAPTER 3

Accumulating research illustrates that people are greatly influenced by other people's emotional expressions (Van Kleef, Van Doorn, Heerdink, & Koning, 2011). Most of this work has examined how a single person's emotional displays affect the perceptions, feelings, and behaviors of another person in dyadic interactions (e.g., Clark, Pataki & Carver, 1996; Hatfield, Cacioppo, & Rapson, 1994; Hess, Blairy, & Kleck, 2000; Knutson, 1996; Van Kleef, De Dreu, & Manstead, 2004). However, people spend much of their social life in groups, for instance in work teams, in groups of friends, in school classes, and in sports teams. Compared to dyadic interactions, the potential number of emotional expressions is greater in groups, and such expressions might jointly influence individual group member's cognitions, emotions, and behavior (Heerdink, Van Kleef, Homan, & Fischer, 2013).

Groups are seldom unanimous, however, which implies that an increased number of emoters allows for greater variability of displayed emotions. In the present paper, we examine how multiple emotional expressions jointly influence a focal group member's behavior. More specifically, we focus on the number of individuals that express anger. Is a single angry group member sufficient to influence a focal individual or should more group members express anger? To answer this question, we build on work on majority size and social influence in groups (e.g., Bond, 2005; Latané, 1981). We predict that the more group members react with anger to a focal individual, (1) the more this individual will feel rejected and (2) the greater the social influence, as reflected in conformity to the majority's position. We tested these predictions in two experiments in which we employed a simulated majority influence paradigm.

Expressions of Anger as Tools of Social Influence

People feel angry when they blame another person for an event that is incongruent with their goals (Lazarus, 1991). Anger is typically expressed when people intend to change the other person's behavior to resolve this incongruence (Averill, 1982; Fridlund, 1994). Thus, expressing anger is functional (at least, from the expresser's point of view) to the extent that it leads to behavioral change in the observer (Fischer & Roseman, 2007; Van Kleef, 2009). For instance, it has been shown that expressions of anger can help to extract concessions from negotiation partners (Van Kleef et al., 2004), that a teacher's angry expressions can increase a student's learning performance (Van Doorn, Van Kleef, & Van der Pligt, 2014), and that leaders' displays of anger can enhance follower motivation and performance (Damen, Van Knippenberg, & Van Knippenberg, 2008; Van Kleef, Homan, Beersma, & Van Knippenberg, 2010).

Within a group context, angry expressions can be seen as cues of imminent exclusion, because the expression of anger and other types of hostility typically precedes the exclusion of deviants (Schachter, 1951). Anger may further signal rejection because it draws attention to the unacceptability of an individual's deviant behavior, and by extension, of the individual him- or herself (Heerdink et al., 2013).

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Supporting this reasoning, Heerdink and colleagues demonstrated that when multiple group members unanimously expressed anger about a deviant person's behavior, the deviant individual felt rejected by the group.

Maintaining a sense of belonging is a fundamental human need (Baumeister & Leary, 1995). Feeling rejected is therefore likely to trigger behavior aimed at restoring the connection with other people (Romero-Canyas et al., 2010; Williams, Cheung, & Choi, 2000). Because conformity signals good group membership (Hollander, 1960) and facilitates collective goal pursuit by restoring group cohesion (Festinger, 1950; Jetten & Hornsey, 2014), conformity is an effective way for deviants to seek reacceptance when they feel rejected as a consequence of other group members' angry reactions. Congruent with this idea, Heerdink et al. (2013) showed that participants who felt rejected by their (unanimously) angry fellow group members were likely to conform to the group norm, provided that their conformity could facilitate their reconnection with the group. What is unclear, however, is how many angry group members it takes to enforce such social influence.

Number of Angry Expressions, Feelings of Rejection, and Conformity

Insights about the relation between the number of angry reactions and the degree to which the deviant will conform can be gleaned from general theories about how the social influence of multiple influence sources combines. For instance, Social Impact Theory (SIT; Latané, 1981) describes the mathematical relation between the number of influencer sources and their influence on an individual person. The theory predicts that social influence increases as the number of influencers increases. Additionally, SIT proposes that the relation between the number of influencers and their social impact (everything else being equal) follows a power law, which implies that each additional influence source is expected to add to the total social influence, but the increase is smaller than for the previous influence source.

Although SIT has primarily been used to describe majority and minority influence (e.g., Latané & Wolf, 1981), one study shows that it also applies to social exclusion processes. In two different paradigms, DeWall, Twenge, Bushman, Im, and Williams (2010) tested the relation between the number of group members who did not join in the social exclusion of a participant (e.g., by indicating their willingness to work with the participant) and the extent to which participants felt rejected. They found that felt rejection decreased as the number of accepting group members increased. A meta-analysis of 115 conformity studies further showed that the number of influencers is positively associated with the degree of social influence that is engendered (Bond, 2005). Interestingly, despite showing a slightly better fit to the data, SIT's power function did not yield a significantly improved prediction over a linear model when majority sizes of 1 were excluded, indicating that the relationship between number of influencers and social impact is most parsimoniously represented as a linear function.

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Based on these considerations, we hypothesize that deviant group members feel more rejected the more their fellow group members express anger about their deviance (H1). Because feeling rejected motivates a desire to seek reacceptance, we predict that deviants conform more to the extent that they receive more angry reactions (H2), and that this relationship is mediated by felt rejection (H3). We conducted two experiments to test these hypotheses. In both studies, a simulated group interaction was set up in which the participants' opinion was opposite to their fellow group members' opinions. Thus, the situation represented a majority influence situation, in which the participant had a deviant position. The majority then responded emotionally to the participants' deviance. We used neutral to mildly happy reactions as the non-angry reactions in our studies. Previous research suggests that expressing some happiness is the 'default' in positive social interaction (e.g., Jakobs, Fischer, & Manstead, 2001; Fridlund, 1991; Hinsz & Tomhave, 1991), and we reasoned that it would therefore be the most 'normal' reaction in such a group setting.

Study 3.1

In Study 3.1 we systematically varied two factors: the size of the majority (i.e., the total group size minus the deviating participant) and the number of angry reactions from majority members to test whether the number of angry reactions uniquely affects felt rejection, or whether this depends on the total number of majority members. Varying the number of angry reactions to deviance within a group means that the number of non-angry reactions also varies. If, as we hypothesized, felt rejection and subsequent conformity increase with the number of angry reactions, this relation should be found independently of the number of non-angry reactions. Thus, majority size should not moderate the effect of angry reactions on felt rejection or conformity. To separate the effects of majority size from those of the emotional reactions, the experiment was set up in such a way that, independent of their emotional reactions, all majority members disagreed with the participant and agreed with each other with regard to their position in the debate.

For the sake of brevity, we use the notation M|A to refer to experimental conditions. M denotes majority size, and A refers to the number of angry reactions. The number of non-angry reactions may be calculated as $M - A$. Thus, a participant in condition 4|1 was confronted with a majority of four, received one angry reaction, and three (i.e., $4 - 1$) mildly happy reactions. Finally, the letters M or A are used when referring to all levels of a manipulation: 3|A refers to all Majority size 3 conditions (3|0, 3|1, 3|2, and 3|3), and M|1 to all conditions with one angry reaction (2|1, 3|1, and 4|1).

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Method

Participants and design. 370 first-year Psychology students participated in the study as part of an obligatory mass testing session. 56 participants were excluded because their open-ended responses indicated that they doubted the veracity of the simulated interaction. Expression of doubts was not predicted by the manipulations. An additional 34 participants were excluded because they misremembered the number of group members they interacted with, suggesting that they had not paid sufficient attention to the instructions. Misremembering the number of fellow group members was more likely as the number of fellow group members increased ($OR = 3.53$, Wald's $z = 3.85$, $p < .001$)¹. The final sample thus consisted of 280 participants (75 male, $M_{age} = 19.70$, range 18 – 28). Participants were randomly assigned to a condition of the Majority Size (2, 3, or 4) x Angry Reactions (0, 1, 2, 3, or 4) design (logically impossible conditions in which the number of angry reactions exceeded the majority size were, of course, omitted); the distribution over conditions is displayed in Table 3.1.

Table 3.1: Number of participants in each condition (Study 3.1). Conditions are based on majority size and the number of angry reactions received by the participant.

		Number of Angry Reactions				
		0	1	2	3	4
Number of Majority Members	2	27	23	26		
	3	24	29	21	27	
	4	21	23	19	23	17

Note. Cell sizes vary due to random assignment to conditions. Three cells are empty because there cannot be more angry reactions than there are members of the majority.

Materials and procedure. The experiment was introduced as having two goals: to investigate the opinions of students on a number of study-related issues, and to determine the efficiency of a newly developed discussion technique called the ‘one-shot discussion’, which was defined as a discussion in which every participant gets one chance to make a statement.

¹ In all analyses, majority size and angry reactions were entered as unstandardized predictors. As a result, the reported β s and OR s indicate the change (in standard deviations, and in odds, respectively) in the dependent variable that is expected when one member is added to the majority, or when there is one more angry reaction. All other predictors were standardized prior to modeling, and the associated β s and OR s have their regular interpretation.

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Initial opinion. Participants first provided their opinion about nine student-related issues. Among these was the issue that would be used later in the group discussion (the focal issue): the percentage of the study materials in the first and second years of the Bachelor's program that should consist of journal articles relative to books. Responses could be made using a slider that ranged from 30% to 70% so as to anchor responses around 50%, which was used as a reference point to determine the group norm (see 'Deviance manipulation' below). Alternatively, participants could enter a whole number between 0 and 100 in a separate box.

Majority size manipulation. Participants then learned that they would be participating in a one-shot discussion on one of the student-related issues. The program simulated connecting to a number of fellow participants in the mass testing session. Depending on the majority size condition, the connection routine 'discovered' two to four other participants before proceeding to the next stage. Thus, total group sizes for the group discussion (including the participant) varied from three (in the 2|A conditions) to five (in the 4|A conditions).

Deviance manipulation. The next screen indicated that the 'articles vs. books' issue had been selected, and participants were presented with information that indicated that their opinion deviated from the group norm. The group norm was manipulated by showing the answers that the fellow group members had supposedly given, and were drawn from one of two sequences. For the 206 participants (73.6%) whose initial answer fell below 50%, the majority's answers were shown to have been 68, 90, 75, and 85 ('many articles' group norm); for the remaining participants, who had originally answered more than 50%, the corresponding majority answers were 32, 10, 25, and 15 ('few articles' group norm). The number of answers shown corresponded with the Majority size condition. For instance, participants in the 2|A conditions who preferred less than 50% of the study materials to consist of journal articles learned that their first fellow group member had answered 68%, and the second 90%. (No more answers were shown, because there were no more group members in this condition.)

Angry reactions manipulation. The next phase was the group discussion, which contained the manipulation of the group's angry reactions. In the group discussion, the group members would each send a successive statement about their opinion to the others. The participant learned that s/he would be the last to state their opinion to the others.

The statements contained arguments and were framed in either a mildly happy or angry way. Four arguments were used for each of the two possible group norms (more articles or more books). The emotional tone of the statements was manipulated by means of emotional words such as 'annoys me'/'makes me angry'; words with strong emotional overtones such as 'ridiculous'; and happy versus angry emoticons, that is, :) or >:(. To avoid a confound between majority size and the number of presented arguments, the statements were written in such a way that all participants read all four

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arguments. Thus, one of the majority members in the 3|A conditions, and both majority members in the 2|A conditions used two arguments in their statements. Example statements can be found in Table 3.2 at the end of this chapter.

After having received all the simulated group members' statements, participants were asked to write a statement themselves. These statements were not analyzed; rather, we used them to estimate whether participants doubted the reality of the situation (see Manipulation Checks below). After writing and sending their statement, participants were given 30 seconds to read and study all the statements that had been made in the discussion.

Conformity measure. Next, the participants read that a student body had developed a proposal related to the focal issue. This proposal was manipulated to be consistent with the group norm (and therefore opposed to the participant's position): The student body proposed to increase the percentage of journal articles to a minimum of 75% when the group norm was 'many articles', or to reduce the percentage to a maximum 25% when the group norm was 'few articles'. Then, participants were asked to vote. Because the framing of the proposal was consistent with the group norm, a higher proportion of votes for the proposal reflected more conformity.

Acceptance/rejection scale. Following four filler items that asked about the extent to which the discussion had been satisfactory, felt acceptance/rejection was measured using the 4-item 7-point bipolar scale used by Heerdink and colleagues (2013), e.g., "I feel rejected by the group" (1 = *not at all*, 7 = *very much*; $\alpha = .64$).

Manipulation checks. Two items checked whether participants perceived the group norm accurately (e.g., "My fellow group members prefer books rather than journal articles", $r = -.82$, $p < .001$). These items were embedded in a questionnaire that checked participants' impressions of the discussion (e.g., the extent to which they thought the others agreed with each other).

To check the manipulation of majority size, participants were then asked to indicate with how many people they had interacted (0 to 4). Thirty-four participants misremembered majority size, and they were excluded from the analyses.

Three questions were used to check the manipulation of angry reactions. A first question asked whether or not the other group members had expressed anger during the interaction (yes or no). A second question asked how many of their fellow group members had expressed anger (0 to 5). A third question asked how much anger their fellow group members had expressed (1 = *not at all*, 7 = *very much*).

Finally, participants were asked the open-ended question, "Did you notice anything abnormal, strange, or that the experimenters should know about (e.g., apparatus failure)?"

Debriefing. At the end of the computerized mass-testing session, participants received a booklet that contained the debriefing for all experiments included in the

session. The debriefing contained a description of the purpose of the study, explained the aspects of the experiment that had been simulated, and provided an e-mail address where more information could be obtained.

Results

Analytic strategy. Unless otherwise stated, analysis of each dependent variable began by fitting a full (linear regression) model with the Majority Size \times Angry Reactions interaction and main effects as linear predictors.² Because less immediate influence sources are less able to engender social impact (Latané, 1981), we controlled for the immediacy of the other group members as a source of social influence by including a measure of social distance as a covariate. It was calculated as the numerical distance between a participant's initial opinion and the group norm (the average of the fellow group members' answers), and reflects the extent to which the participant occupied a deviant position in the group. We refer to this variable as *level of deviance*.

After fitting the full model, this model was simplified using standard model simplification procedures: Non-significant predictors were eliminated step-by-step, starting with the more complex terms (i.e., interactions before main effects). The predictive power of the simplified model was re-assessed after each elimination. The reported, final models are the simplest models (i.e., fewest predictors) that do not sacrifice predictive power relative to the full model. That is, a model comparison yields a non-significant ($p \geq .050$) difference between the full and the final model.

Manipulation checks. Analysis of the group norm manipulation check indicated that participants accurately remembered the group norm in their group. Participants perceived their fellow group members to be more in favor of articles when the group norm had been 'many articles' compared to 'few articles', $\beta = 2.03$, $t = 33.78$, $p < .001$. No other effects were retained in the final model, $R^2 = 80.4\%$, $F(1, 278) = 1141.22$, $p < .001$. The group norms were also perceived as close to the relevant extremes of the 7-point scale (1 = *more books*, 7 = *more articles*) in both the 'many articles' groups ($M = 6.07$, $SD = 0.89$) and the 'few articles' groups ($M = 2.05$, $SD = 0.85$). Thus, the group norms were clear to the participants.

The three angry reactions manipulation checks converged in showing that the angry reactions manipulation had been successful. First, a logistic regression indicated that the likelihood of reporting that fellow group members had expressed anger increased as the number of angry reactions increased, $OR = 2.77$, Wald's $z = 7.61$, $p < .001$. Second, the reported number of angry reactions increased linearly as the manipulated number of angry reactions increased, $\beta = 0.47$, $t = 11.77$, $p < .001$ ($R^2 =$

² We also fitted the power functions predicted by SIT, but found that this only improved the prediction of the angry reactions manipulation checks. Following Bond (2005) and our own prediction (H1), we therefore focus on the simpler, linear models in the remainder of the paper. We return to this issue in the General Discussion.

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33.3%, $F(1, 278) = 138.64, p < .001$). Third, we found that with every extra angry reaction, participants reported that their fellow group members had expressed more anger, $\beta = 0.47, t = 11.59, p < .001$ ($R^2 = 32.6\%$, $F(1, 278) = 134.37, p < .001$). No other effects were retained in any of the three final models. Together, these strong and positive effects indicate that the angry reactions manipulation was successful.

Acceptance/rejection. Participants felt more rejected as the number of angry reactions increased, $\beta = 0.15, t = 3.22, p = .001$. Moreover, the covariate was significantly related to felt rejection: Participants felt more rejected as they were more deviant, $\beta = 0.14, t = 2.33, p = .020$. No other predictors were retained in the final model ($R^2 = 5.4\%$, $F(2, 277) = 7.91, p < .001$). The results thus support H1: Felt rejection increased as the number of angry reactions increased, independent of the size of the majority.

Conformity. Logistic regression on participants' votes (coded so that positive regression coefficients indicate an increase in the likelihood of conformity) showed that conformity increased with the number of angry reactions, $OR = 1.32$, Wald's $z = 2.55, p = .011$. The covariate was also significant, indicating that conformity was less likely to the extent that the participant initially disagreed more with the group, $OR = 0.41$, Wald's $z = -5.58, p < .001$. Thus, the data support H2 that deviant individuals are more likely to conform when more of their fellow group members respond with anger to their deviance.

Mediation analysis. To test whether the effect of angry reactions on conformity could be explained by participants' feelings of rejection, we conducted a mediation analysis. Using logistic regression, the participants' decision was regressed on level of deviance (covariate), angry reactions, and the interaction between majority size and felt rejection. Model simplification dropped the majority size manipulation from the model. As before, we found that conformity was less likely to the extent that participants were more deviant, $OR = 0.41$, Wald's $z = -5.41, p < .001$. Unexpectedly, and contrary to H3 that feeling rejected would explain the positive effect of angry reactions on conformity, we found marginally significant evidence that the likelihood of conformity was *reduced* to the degree that participants had felt rejected, $OR = 0.78$, Wald's $z = -1.77, p = .077$. Additionally, the number of angry reactions remained a significant and positive predictor of conformity, $OR = 1.37$, Wald's $z = 2.81, p = .005$.

When the coefficients obtained from the mediation analysis are compared to those from the analysis of conformity above, a small increase in the regression coefficient for the number of angry reactions may be observed (from $OR = 1.32$ to $OR = 1.37$). This indicates a potential suppressor effect (MacKinnon, Krull, & Lockwood, 2000), which means that angry reactions may have had two simultaneous effects: a direct effect of angry reactions that increased conformity; and an indirect effect of angry reactions, through felt rejection, which reduced conformity (cf. Hayes, 2009). To test

this possibility, the strength of the indirect effect of angry reactions on conformity through felt rejection was estimated using bootstrapping ($R = 50,000$ resamples). There was indeed some evidence for an indirect, conformity-reducing path, $OR = 0.963$, 95% bias-corrected and accelerated confidence interval (95% BC_a CI): [0.904, 0.999], uncorrected two-tailed $p = .069$. This suggests that the likelihood of conformity was simultaneously increased by more angry reactions, and decreased by the felt rejection that was caused by these angry reactions.

Discussion

Study 3.1 showed that deviant individuals felt more rejected, and conformed more, the more their fellow group members responded with anger to their deviant position, supporting H1 and H2, respectively. Moreover, as expected, these relations were not moderated by the size of the majority. However, the effect of angry reactions on conformity was not mediated by felt rejection, contrary to H3. This unexpected result led us to consider more closely what might be driving the relationship between felt rejection and conformity. Previous work has shown that whether people conform after feeling rejected by others depends on two conditions (e.g., Heerdink et al., 2013; Matschke & Sassenberg, 2010; Romero-Canyas et al., 2010). First, the rejectee should be motivated to be reaccepted. Second, there should be an actual possibility of reacceptance by the group through conformity (Heerdink et al., 2013). That is, deviants should be more likely to conform when changing their position towards the group norm is instrumental in eliciting (re-)acceptance.

With regard to the first condition, the data of Study 3.1 showed that conformity was less likely to the extent that participants disagreed more with the majority of their group. This is consistent with classic work showing that people are more influenced by similar others (Festinger, 1950; Latané, 1981). Because similarity increases interpersonal attraction (Montoya, Horton, & Kirchner, 2008), less deviant participants may have felt more attracted to their groups than more deviant individuals. As a result, they may have been more motivated to seek reacceptance, which helps explain why conformity was higher among less deviant participants.

The finding that feeling rejected was associated with decreased conformity may indicate that conformity was not perceived as instrumental to gaining reacceptance in Study 3.1. The operationalization of conformity in terms of voting behavior may have inspired a sense of anonymity among participants, because votes are often anonymous. Thus, participants may have inferred that the majority would not observe their conformity and therefore would not reaccept them, even if they conformed. This implies that we may find a different effect if the majority can observe the deviant's conformity. We examined this possibility in Study 3.2.

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Study 3.2

In Study 3.2, we investigated whether the effect of majority anger on a deviant individual's conformity depends on the deviant's sense of anonymity. For this purpose, we included a manipulation of whether the participants' final decisions were private (as in Study 3.1) or public. We hypothesized that there would be a more positive association between felt rejection and conformity if the decision was public rather than private (H4).

We further explored whether the initial level of deviance of the participant served as an additional moderator, such that the anonymous or public nature of the final decision would only have an effect on those participants who are not too far removed from the group norm (i.e., those who are relatively less deviant). Participants who are very deviant from the group should be less attracted to their groups (Montoya et al., 2008), which may lower the motivation to seek reacceptance. Thus, we explored whether our data fit the idea that feeling rejected increases conformity only when two criteria are met: (1) the level of deviance is relatively small, and (2) conformity is visible to the group (i.e., under public, but not under private voting).

Method

Participants and design. 247 first-year Psychology students participated in the study, which was part of a mass testing session. Participants whose responses to the open questions suggested doubt about the reality of the simulated interaction ($n = 11$), and participants who misremembered the number of group members they had interacted with ($n = 19$) were excluded, resulting in a total of 217 participants (64 male, $M_{age} = 19.43$, range 18 – 27). Failing these checks was not predicted by the manipulations. All participants interacted with a majority of three,³ and they were randomly assigned to one of the conditions of the Angry Reactions (0, 1, 2, or 3) x Decision Context (public or private) design.

Materials and Procedure. Study 3.2 was similar to Study 3.1, and revolved around the same issue (the percentage of journal articles versus books). In addition to the procedural changes described below, we made two minor changes. First, the statements sent by the simulated participants were slightly edited to be more consistent in terms of wording and length (Table 3.3 at the end of this chapter). Second, one of the angry reactions manipulation checks (the question “How many of

³ The study originally had a Majority Size (2 vs. 3) x Angry Reactions (0 to 3) x Decision Context (Private vs. Public) between-subjects design. Due to a programming error in the conditions with a majority size of two (2|A), the simulated group members disagreed with each other in these conditions when the norm was 'more books' (i.e., one group member argued for more books; the other for more journals). Thus, these conditions did not represent the intended majority influence situation, and were therefore dropped from the design.

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your fellow group members had expressed anger?”) was dropped for reasons of economy.

Deviance manipulation. The initial opinion measure was modified so that the slider ranged from 10% to 70%, and the group norm was now determined using the critical value of 40%. Participants whose initial opinion was less than 40% interacted with a group that endorsed the ‘many articles’ group norm, and the remaining participants with a group in which ‘few articles’ was the group norm. The fellow group members’ opinions (which constituted the deviance manipulation) were also adjusted so that both group norms were equally far away from the critical value of 40%. The sequences were 52-69-60 for the ‘many articles’ group norm, and 28-11-20 for the ‘few articles’ group norms. The percentage of participants interacting with a group with the ‘many articles’ group norm (73.3%) was comparable to that in Study 3.1 (73.6%).

Decision context manipulation. For participants in the private decision condition, the procedure was identical to that in Study 3.1. For participants in the public decision condition, the procedure differed in several ways. First, participants learned that they would have to explain their final decision to their fellow group members. Second, after completing the discussion, a new instruction screen alerted participants that their decision would be visible to their fellow group members, and that they would need to write an explanation for their decision that would be sent to their fellow group members. The decisions would again be taken one-by-one, in the reverse order in which the statements had been written. Because the participants had always written the last statement, they would always be the first to take and explain their decision. This ensured that the participant would not be influenced by anything but the statements they had read during the discussion.

After participants had made their decisions, the program simulated a connection failure, and subsequently the connection timed out. The purpose of this procedure was to avoid having to present any simulated decisions/explanations to the participant, which could potentially alter the participants’ responses in the questionnaire.

Decision context manipulation check. To check whether the decision context manipulation (public vs. private) was had been successful, participants were asked to indicate their agreement with the statement “I could take my decision anonymously” on a 7-point scale (1 = *not at all*, 7 = *very much*). This item was added to the questionnaire that also contained the items that checked the perception of the group norm.

Results

Analytic strategy. We analyzed the data using the same general strategy as in Study 3.1. In this case, the full model contained the Angry Reactions x Decision Context interaction and main effects as linear predictors, and level of deviance was

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again included as a covariate. Once again, the reported final model is the simplest model that does not sacrifice predictive power compared to the full model.

Manipulation checks. Analysis of the group norm manipulation check indicated that participants had perceived the group norm correctly, $R^2 = 84.2\%$, $F(1, 215) = 1149.13$, $p < .001$. Participants perceived the norm to be much closer to the ‘journals’ end of the scale (from 1 = *more books* to 7 = *more journals*) when the group norm was ‘many articles’ ($M = 6.10$, $SD = 0.80$) rather than ‘few articles’ ($M = 1.86$, $SD = 0.86$), $\beta = 2.07$, $t = 33.90$, $p < .001$. No other predictors were retained in the final model. Thus, the group norms were clear.

The manipulation check for decision context was influenced by whether the decision was private or public ($R^2 = 3.2\%$, $F(1, 215) = 7.03$, $p = .009$). As intended, participants in the private decision condition ($M = 5.89$, $SD = 1.25$) reported that they could take their decision more anonymously than participants in the public decision condition ($M = 5.39$, $SD = 1.52$), $\beta = 0.36$, $t = 2.65$, $p = .009$. The final model contained no other predictors.

Analysis of the manipulation checks for angry reactions showed that this manipulation also worked as intended. First, a logistic regression analysis on the question of whether the other group members had expressed anger indicated that more angry reactions increased the likelihood of answering this question affirmatively, $OR = 2.64$, Wald’s $z = 6.18$, $p < .001$. Second, the other group members were perceived to be more angry as the number of angry reactions increased, $\beta = 0.44$, $t = 8.06$, $p < .001$ ($R^2 = 23.2\%$, $F(1, 215) = 64.89$, $p < .001$). No other effects were retained in the final models. Thus, the angry reactions manipulation was successful.

Acceptance/rejection. We predicted that participants would feel more rejected as they received more angry reactions. The final model supported this prediction, $R^2 = 6.4\%$, $F(2, 214) = 7.35$, $p = .001$. As the number of angry reactions increased, participants felt more rejected, $\beta = 0.15$, $t = 2.52$, $p = .012$. In addition, as in Study 3.1, participants felt more rejected when they were more deviant, $\beta = 0.18$, $t = 2.65$, $p = .009$. No other effects were retained in the final model.

Conformity. In contrast to the findings of Study 3.1, logistic regression on the decisions made by participants revealed that they were not influenced by the manipulations. Thus, H4 that felt rejection would increase conformity in a public decision context was not supported. However, replicating Study 3.1, the results did show that the participant’s level of deviance predicted conformity: Being more deviant decreased the likelihood of conformity, $OR = 0.45$, Wald’s $z = -4.99$, $p < .001$.

Interestingly, subsequent exploratory analyses provided support for the idea that the relationship between felt rejection and conformity is contingent upon the decision context as well as the amount of initial deviance of the participant. In these analyses, we increased our statistical power by using the anonymity manipulation check as a predictor instead of the decision context manipulation. A model that included the

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three-way Felt Rejection x Anonymity x Level of Deviance interaction significantly improved the prediction of conformity, relative to the model that contained only felt rejection and level of deviance as predictors ($\chi^2(5) = 12.17, p = .033$). A plot of this three-way interaction ($OR = 1.63$, Wald's $z = 2.43, p = .015$; see Figure 3.1) indicates that the relation between felt rejection and conformity was generally negative. Only for relatively less deviant participants who did not feel anonymous, the relation between felt rejection and conformity was more positive.

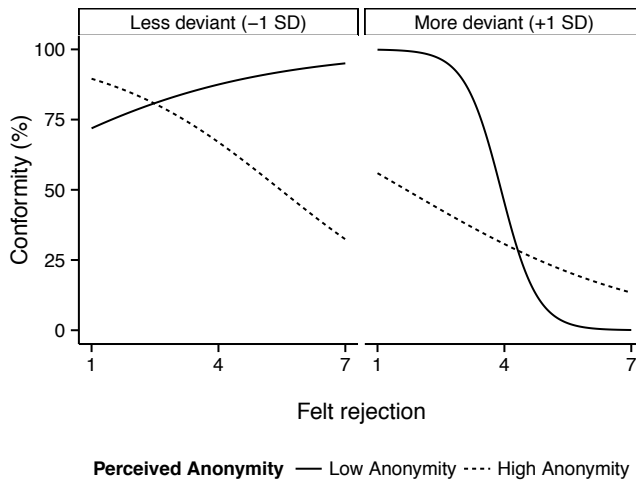


Figure 3.1. Plot of the predicted values from the three-way Felt Rejection x Anonymity x Level of Deviance interaction on conformity (Study 3.2). The panels show the differences between relatively less deviant and relatively more deviant group members. The line types are based on the anonymity manipulation check, and show the different relation between felt rejection and conformity depending on the subjective anonymity of the decision (low and high anonymity, or 2 and 6 on the 7-point scale, respectively).

Indirect effect. Study 3.1 indicated that angry reactions produced two competing effects: one direct, that increased conformity; and one through felt rejection, that decreased conformity. Not finding a relation between angry reactions and conformity may thus simply indicate that the positive and negative effects of angry reactions were cancelling each other out (cf. Hayes, 2009). Thus, even in the absence of a main (total) effect, it is recommended to test for an indirect effect (Hayes, 2009).

We tested this indirect effect as in Study 3.1. First, we tested the relation between felt rejection and conformity, and whether this relation depended on decision context. Consistent with the existence of an indirect path, conformity was less likely to the extent participants felt more rejected, $OR = 0.68$, Wald's $z = -2.52, p = .012$. In

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addition, as before, conformity was less likely to the extent participants were more deviant, $OR = 0.48$, Wald's $z = -4.61$, $p < .001$. No main effects or interactions involving decision type were retained in the final model. Using bootstrapping ($R = 50000$ resamples), we then directly tested the indirect path from angry reactions, through felt rejection, to conformity. The analysis supported the existence of this indirect effect: $OR = 0.943$, 95% BC_a CI: [0.854, 0.992], uncorrected two-tailed $p = .024$. No direct, conformity-increasing effect of angry reactions was found. Thus, the indirect, conformity-reducing effect from Study 3.1 was indeed replicated.

Discussion

Study 3.2 replicated the finding that the more their fellow group members respond with anger to their behavior, the more deviant individuals feel rejected, and that this increased felt rejection subsequently decreases conformity. We hypothesized that in a public decision context, this felt rejection would be associated with increased conformity. Our results, however, show that the relation between felt rejection and conformity not only depends on the decision context, but also on one's level of deviance: for relatively less deviant individuals who felt their decision would be public, we found evidence that the negative relation between felt rejection and conformity can reverse. The findings of Study 3.2 thus replicate and extend those of Study 3.1, and are consistent with the idea that conforming to the group requires both visibility of conformity, as well as a relatively lower level of deviance.

General Discussion

Starting from the perspective that emotions are functional in regulating intragroup processes (e.g., Keltner & Haidt, 1999), and the observation that anger is expressed in order to change other people's behavior (e.g., Fischer & Roseman, 2007), we raised the question of whether the number of angry reactions to a deviant group member influences conformity. In two studies, we found evidence for our prediction that deviant group members would feel increasingly rejected as the number of angry reactions from the majority increases, and we found this relation to be independent of the total size of the group (Study 3.1). This felt rejection generally decreased conformity, unless two criteria were met: the initial extent of deviance was relatively small (Studies 3.1 and 3.2), and conformity could be instrumental in gaining reacceptance (Study 3.2).

These studies not only provide insight into the dynamics of emotional influence within groups where multiple and different emotional expressions may occur, but they also illustrate the usefulness of studying the role of discrete emotional episodes in shaping intragroup processes. Existing research that focused on how affective phenomena impacts group outcomes (e.g., Barsade, 2002; Van Kleef et al., 2010) has primarily invoked the notion of emotional contagion, where one group member's

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affective experiences infuse, or trigger similar affective experiences in another group member (Barsade, 2002). We complement this perspective by offering insight into how discrete emotional expressions (or episodes) affect group dynamics. Studying affective processes in this more fine-grained manner helps us to understand the circumstances under which emotional reactions to deviance may ignite or sustain intragroup conflict (e.g., Jehn, 1997), and when they may be functional instead.

To further our understanding of the conditions under which certain emotional expressions may be functional for groups, it is important to first consider why we found a generally negative relation between felt rejection and conformity. This is likely to reflect the antisocial behavior that is typically associated with rejection experiences (for a review, see Leary, Twenge, & Quinlivan, 2006). For instance, in the previously discussed study by DeWall et al. (2010), participants who had been socially excluded by their peers allocated more hot sauce and administered longer blasts of loud noise to their rejecters. Furthermore, there is evidence that people who feel rejected are less inclined to cooperate with their groups (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). Given that non-conformity breaks the group's consensus, which hinders coordinated goal pursuit, increased non-conformity may be a way to retaliate against the rejecters. However, consistent with previous work (Heerdink et al., 2013), we have also shown that this tendency to aggress is reduced if contextual factors both promote the motivation to remain a member of the group (e.g., under relatively less deviance, because similarity increases attraction; Montoya et al., 2008) and allow conformity to be instrumental in gaining reacceptance (e.g., when decisions are public). Because we conducted the experiments during a mass-testing session with first year students, our participants' overall degree of identification with their peers may have quite low. Thus, their motivation to remain a member of their groups may have been simply insufficient (even when they were relatively less deviant) to completely reverse the relation between rejection and conformity, and show that a majority may pressure a deviant individual into conforming by reacting with anger.

An important inconsistency between our findings and those from earlier majority influence research is that the size of the majority played no role in determining felt rejection and conformity (Study 3.1), despite majority size being one of the most prominent factors in the majority influence literature (e.g., Asch, 1956; Bond, 2005; Latané & Wolf, 1981). This may point to a similarity between the emotional influence process studied here and processes implicated in normative influence (Deutsch & Gerard, 1955). Normative influence stems from the power of the group to include or exclude individuals, and occurs when people change their opinion for fear of losing group membership (Deutsch & Gerard, 1955). By affecting one's sense of acceptance or rejection, angry reactions are likely to invoke the same motivations as underlying normative influence. Our finding that majority size did not play a role in determining conformity may thus indicate that majority size only plays a role when it is ambiguous to what extent deviance will lead to rejection. In this case, people may

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infer that they may be rejected if they stay deviant, which leads them to conform. In the current set of studies, information about contingent rejection was provided in the form of angry reactions, which may have disambiguated the situation. This explanation remains to be tested, however.

The direct and positive effect of angry reactions on conformity in Study 3.1 may indicate that angry reactions enhance informational influence as well. Informational influence occurs because the majority, due to its greater size, has a greater claim to objective reality than a single individual (Deutsch & Gerard, 1955). Informational influence thus occurs when a majority persuades an individual that a certain opinion or behavior is objectively correct. Angry overtones may increase the persuasiveness of arguments, for instance because anger is associated with certainty (Lerner & Keltner, 2001), which often increases persuasion (Karmarkar & Tormala, 2010). There is indeed some evidence that a source's angry expressions can influence the attitudes of a target (Van Kleef, Van den Berg, & Heerdink, 2014). However, it should also be noted that this direct conformity-increasing effect was not replicated in Study 3.2, where the effect of anger expressions on conformity depended on both the initial level of deviance and the potential instrumentality of conformity in securing acceptance. Future studies may examine these issues into more detail.

Although we used linear modelling to test our hypothesis, it is interesting to consider to what extent the power function predicted by SIT (Latané, 1981) may provide a better description of our data. Additional analyses revealed that SIT's power curve only significantly improved the model fit for the angry reactions manipulation checks in both studies. Thus, consistent with the results from the previously described meta-analysis by Bond (2005), the added complexity of SIT's power curve was not needed to describe the data. This may be due to the relatively small effect sizes observed here, which yielded insufficient resolution to fit the SIT curve. More realistic settings, where the effects of emotional expressions are undoubtedly stronger than in the simulated interactions studied here, may thus yield different conclusions. Alternatively, the range of angry reactions (0 to 4) may have been too narrow to show the gradually smaller effects of subsequent angry reactions. Awaiting further research into this direction, we provisionally conclude that the relation between angry reactions and feeling rejected is best described as linear.

To provide a first demonstration of how multiple different emotional expressions combine, we contrasted angry with mildly happy expressions. However, many real-life group interactions are undoubtedly more complex than that. Thus, future research could fruitfully explore how different emotional expressions impact on group processes, and answer increasingly complex questions about when different emotional expressions may have complementary or contrasting effects. Later extensions of Social Impact Theory have elaborated on how different influence fields pull/push the individual in certain directions (Nowak, Szamrej, & Latané, 1990) and could be used as a starting point for such research.

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In sum, we have shown that deviant individuals feel increasingly rejected as more people react with anger to their deviance, and we have shown that this felt rejection generally undermines conformity. However, our analysis also illustrates that these anti-social tendencies fueled by feeling rejected may be overcome, depending on two critical contextual factors: the initial level of deviance and the potential instrumentality of conformity for gaining acceptance. In showing these relations, we have demonstrated the conditions under which anger may be potentially effective in resolving the threat to group functioning posed by deviance.

Table 3.2: Example statements sent by the simulated group members during the simulated group interaction (Study 3.1).

Norm: Many Articles		Group Norm: Few Articles	
Mild Happy	Angry	Mild Happy	Angry
later in our study, we'll have to read those articles anyway, so I think it's better to get used to that style as soon as possible..	it's ridiculous that we have books for absolutely everything! we'll be reading those articles later in our study anyway, so doesn't it make sense to get used to that style as soon as possible?	I often don't see the connections between articles and other research, so I prefer a book.. :)	in articles it's often totally unclear how it connects to other research, so having so many articles won't help us in any way!
For my part, we'll just do almost everything using journal articles, it's much cheaper!:)	For my part, we'll just do almost everything using journal articles, it's much cheaper! Not everyone can afford those books so easily!!! >:(For my part, we'll just do almost everything using books, I find it handy to have a good reference on the bookshelf!	For my part, we'll just do almost everything using books, it really annoys me that some people think it's a good idea to first print everything and then throw it away, rather than investing in something durable>:(
journals are much more up-to-date than books, right? seems better to me to get an idea of what's happening in psychology directly from the start!	journals are much more up-to-date than books, right? I find it really stupid to waste our time by learning about obsolete theories..	I'd rather have one book that just contains everything instead of having to look for an article again and again..	ridiculous idea, it's often impossible to even find an article.. please give me a book that just contains everything!
Everything has already been said really, but isn't it just better to read the original instead of what someone else thinks about that?	Indeed, don't you just want to read the original instead of how some book writer interprets that??	I'm also against articles, they've been written only so that it suits the author, I think a book is much more objective!	I'm also against articles, theres no point in reading only that which happens to suit the author?! A book is much more objective..

Note: These statements were used in the conditions with four majority members. Depending on the group norm (which was manipulated to be opposite to the participant's initial opinion) and the assigned number of angry reactions, one statement from each row was sent to the participant.

Table 3.3: Statements sent by the simulated group members during the simulated group interaction (Study 3.2).

Norm: Many Articles		Group Norm: Few Articles	
Mild Happy	Angry	Mild Happy	Angry
later in our study, we'll have to read those articles anyway, so I think it's convenient to get used to that style as soon as possible..	we'll be reading those articles later in our study anyway, so we should get used to that style as soon as possible, right? it's ridiculous that we have to use books first!	in articles, the connections to other research are not as clear as in books so I'd prefer books..	in articles it's often totally unclear how it even connects to other research, so it's ridiculous to do away with books for that
For my part, we'll just do almost everything using journal articles, it's much cheaper!:))	For my part, we'll just do almost everything using journal articles, it's much cheaper! Not everyone can afford those books so easily!!! >:(Printing articles costs a lot of paper and ink, and you throw them away anyway, so books are much better for the environment. Much more sustainable:)	Using articles instead of books is nothing but pollution!! Do you know how much ink and paper that takes? And we throw them away anyway, so they're just worthless >:(
journals are much more up-to-date than books, right? if we use journal articles we get an idea of what's happening in psychology directly from the start!	journals are much more up-to-date than books, right? it really irritates me to have to learn about all kinds of obsolete theories first	I'd rather have one book that just contains everything instead of having to look for individual articles on the internet..	It's often completely impossible to find an article with these half-broken search engines, so I would find it really super irritating to have to read so many articles..

CHAPTER FOUR

EFFECTS OF ANGER AND HAPPINESS ON CONFORMITY VERSUS DEVIANCE

This chapter is based on Heerdink, M. W., van Kleef, G. A., Homan, A. C., & Fischer, A. H. (2013). On the social influence of emotions in groups: Interpersonal effects of anger and happiness on conformity versus deviance. *Journal of Personality and Social Psychology*, *105*, 262–284.

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At a conference, you and several colleagues decide to go out for dinner together. After some discussion, the group decides on finding a pizzeria. After wandering around fruitlessly for a while, you propose to change plans and go to a nearby Asian restaurant instead. Unexpectedly, your colleagues react annoyed — even a little angry. Does this negative emotional reaction of your colleagues lead you to abandon your new plan and conform to the rest of the group? Or do you decide to leave the group and go to a place that you like?

As this example illustrates, emotions are an integral part of group life. Many events that take place in or outside groups trigger emotions in group members by affecting individual or group-based concerns or goals (Smith, 1993) — such as finding a restaurant. Oftentimes, the emotions that are elicited in a group context do not remain private. Rather, they tend to be expressed, deliberately or not, through facial displays, verbal expressions, bodily postures, and tone of voice (Ekman, 1982). Thus, when a group member elicits an emotion in other group members, the expression of this emotion may inform him or her about how others feel about the situation (Keltner & Haidt, 1999). Given how much time most of us spend in groups, it stands to reason that we will be influenced by the emotions of our fellow group members. Surprisingly, however, past research has largely neglected the question of how an individual group member's behavior is influenced by the emotional expressions of other group members. In the present research we examine one important manifestation of such social influence of emotions (Van Kleef, Van Doorn, Heerdink, & Koning, 2011), namely the effects of a majority's emotional expressions on a deviant group member's behavior. In doing so, we focus on two emotions that have the potential to affect a group member who deviates from a consensually shared opinion or behavior in opposing ways: happiness and anger.

Emotions in Groups

Our theorizing is informed by a social-functional perspective on emotion. According to this perspective, emotions serve social functions in dyads, in groups, and between groups alike (e.g., Fischer & Manstead, 2008; Fridlund, 1994; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Parkinson, 1996; Van Kleef, 2009). Emotions expressed by individuals or (factions within) groups may affect the behavior of other individuals or groups via affective processes (e.g., emotional contagion or liking; Van Kleef, 2009) and/or through inferential processes, whereby individuals use others' emotional expressions to infer information about their motives and intentions (Van Kleef, 2009; Van Kleef, De Dreu, & Manstead, 2010).

Previous research on the functionality of emotions in groups has mainly been concerned with how affect spreads in groups, for instance via “primitive” emotional contagion (i.e., contagion via mimicry and afferent feedback; Hatfield, Cacioppo, & Rapson, 1994). Much research in this domain has focused on the interplay between

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individual-level and group-level affect (e.g., Barsade, 2002; Barsade & Gibson, 1998; Kelly & Barsade, 2001; Smith, 1993; Spoor & Kelly, 2004; Totterdell, 2000; Totterdell, Kellett, Teuchmann, & Briner, 1998; Van Zomeren, Spears, Fischer, & Leach, 2004) and how group affect and affective variability within groups shape group outcomes (e.g., George, 1995; Tiedens, Sutton, & Fong, 2004). For instance, Barsade (2002) found that a confederate's affective state influenced the mood of the other group members, and that contagion of positive affect increased cooperation and group performance. Similarly, Sy, Côté, and Saavedra (2005) showed that teams with a leader who expressed positive affect developed a more positive "group affective tone" (George, 1995) and exhibited better coordination, whereas teams with a leader who expressed negative affect expended more effort on the task.

Focusing on the communicative aspects of emotion instead of how affect spreads within groups, another study showed that expressions of anger (as opposed to happiness) on the part of a leader can increase team performance when team members are motivated to consider the implications of the leader's emotions. When such motivation was high, team members inferred from the leader's anger that their performance was unsatisfactory, which led them to increase their efforts. The leader's happiness, on the other hand, was interpreted as a sign that performance was satisfactory, and this inference led to a decrease in effort (Van Kleef, Homan, Beersma, van Knippenberg, van Knippenberg, & Damen, 2009).

This brief overview of prior research on emotions in groups is far from comprehensive, but it suffices to demonstrate that emotional expressions of group members have the potential to influence the emotions, inferences, and behaviors of fellow group members. It also reveals that previous research has not considered the perspective of the individual within the group, and how other group members' emotional expressions that are contingent on one group member's behavior influence this individual. More specifically, we are interested in how deviant group members' behavior is influenced by the majority's emotional expressions in response to their behavior. Thus, we take a communicative approach to the interpersonal effects of emotions within groups to explain how happiness and anger, when expressed by a majority within a group, may influence a deviant individual's tendency to persist in deviance, or to yield to this majority by conforming. Before theorizing about the process underlying these effects, we first review literature on the role of deviance in group goal attainment, along with evidence regarding naturally occurring emotional responses to deviance.

Deviance and Group Goals

Although group members have a general tendency to maintain their similarity to others by conforming to the opinion and behavior of other group members (e.g., Asch, 1956), deviance is an integral part of group life (Hayes, 2007; Hornsey & Jetten, 2004; Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006;

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Ridgeway, 1978). We define deviance broadly as any behavior or expression of an opinion or idea that is intentionally or unintentionally different from other group members' behaviors or opinions. Thus, for instance, in the opening example, the suggestion to go to a nearby Asian restaurant could be construed as an act of deviance. Unintentional deviance is likely to surface frequently within groups, as an individual's preferences, ideas, intentions, beliefs, and behavior are not necessarily in line with those of the group. In addition, group members may intentionally seek out different roles or diversifying positions to maintain a sense of uniqueness while still belonging to the group (Brewer, 1991; Homan, Greer, Jehn, & Koning, 2010; Hornsey & Jetten, 2004; Mullen & Hu, 1989).

In many situations, deviance is important for attaining group goals. These include situations that require creativity and divergent thinking to find the optimal solution to a problem (see, e.g., Kruglanski & Webster, 1991). Work on hidden profiles, diversity, groupthink, and the common knowledge effect show that group performance may indeed suffer when group members suppress deviance by being too critical of new information and converging too much (e.g., Gigone & Hastie, 1993; Janis, 1982; Stasser & Titus, 1985; 2003; Van Knippenberg, De Dreu, & Homan, 2004). To avoid this situation, deviance is required. For instance, an expert individual may seek (minority) influence through deviance to change a group decision for the better (Moscovici, Mucchi-Faina, & Maass, 1994). Similarly, work on constructive conflict shows that deviance can indeed stimulate group performance (Amason, 1996; Jehn, 1995; Schweiger, Sandberg, & Ragan, 1986). Thus, because deviance can be crucial for obtaining good group outcomes, groups that are aware of the value of deviance may encourage it (for similar arguments, see De Wit, Greer, & Jehn, 2012; Kruglanski & Webster, 1991; Tjosvold, Wedley, & Field, 1986) and respond to it with happiness or enthusiasm.

On the other hand, deviance may constitute a threat to the group's goals, because it violates the shared reality in the group, thereby endangering the harmony and trust in the group (Mannetti, Levine, Pierro, & Kruglanski, 2010; Marques, Abrams, Paez, & Martinez-Taboada, 1998; Sani, 2005). Furthermore, deviance threatens effective goal pursuit when coordinated action is required or when one course of action should be decided upon (Kruglanski & Webster, 1991). For instance, in the restaurant example, one person's deviating dinner preference may undermine or slow down group decision making.

Indeed, in naturally occurring contexts, deviance is often severely socially sanctioned, by passively (e.g., ignoring, ostracizing) or actively (e.g., rejecting, bullying, see Molden, Lucas, Gardner, Dean, & Knowles, 2009) excluding the deviant individual. People holding a deviant opinion may be metaphorically ostracized from their group by placing them outside of what is an "acceptable" opinion for members of their group (Eidelman et al., 2006; Marques et al., 1998; see also Williams, 2007).

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Group members may even be physically excluded from the group by voting them out (Schachter, 1951).

Deviance in groups usually does not lead to immediate social exclusion, however (Levine, 1989). Instead of ignoring and disengaging from a deviant group member, groups may attempt to resocialize the deviant member (Moreland & Levine, 1989; 1994) by increasing their communication to the deviant group member (Schachter, 1951). This increase in communication may be motivated by anger, as studies show that group members feel anger toward a deviant group member (e.g., Juvonen, 1992; Phillips, 2003; see also, Festinger, 1950). Anecdotal reports indeed illustrate how the majority's reactions to deviance may escalate into strong hostility and aggression. For instance, Nemeth (2010) described the reactions of naive subjects in the group to a confederate advocating a deviant position in her Nemeth and Wachtler (1974) study: "The case was hypothetical – but the anger was so evident that subjects were pounding their fists on the table next to the confederate's face (the one who argued a minority position on compensation)" (p. 10). Thus, attempts to force a deviant individual to conform may be accompanied by expressions of anger.

In short, depending on the context and the situation the group is facing, deviance may be welcomed or not. To effectively pursue group goals, groups therefore need to be able to regulate deviance. We argue that the majority's expressions of anger and happiness in response to deviance can be functional in this respect, as happiness may incite further deviance, and anger may motivate the individual to conform.

Anger, Happiness, and Inclusionary Status

We propose that deviant individuals interpret the majority's emotional reaction to their behavior to estimate their position in the group, which may motivate them to change their behavior. More specifically, we argue that happiness and anger, if expressed toward a deviant individual in a group, may be interpreted as information about the deviant individual's inclusionary status. In other words, these emotional expressions influence the degree to which a deviant feels accepted or rejected by the group.

Happiness is elicited by events that an individual perceives as goal congruent (Lazarus, 1991). In a dyadic context, expressions of happiness are interpreted as a signal that the environment is safe (Klennert, Emde, Butterfield, & Campos, 1986; Sorce, Emde, Campos, & Klennert, 1985) and expressing happiness (i.e., smiling) is considered a strategy for affiliation (Clark, Pataki, & Carver, 1996; Fridlund, 1991, 1994; Kraut & Johnston, 1979). Indeed, positive emotions such as happiness serve affiliative functions (Van Kleef, De Dreu & Manstead, 2010), as they help build social relationships when shared (Fredrickson, 1998, 2001). Similarly, in the group context, positive affect is linked to the development of trust and harmonious intragroup relations (e.g., Walter & Bruch, 2008). Thus, happiness may implicate that one's

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belonging in the group is secure. We therefore expect that a deviant individual will feel relatively accepted if the majority responds with happiness to his or her deviance.

Anger, on the other hand, is often expressed in an attempt to get other people to change their behavior (cf. Averill, 1982; Clark et al., 1996; Fischer & Roseman, 2007; Fischer & Manstead, 2008), which implies that one's opinion or behavior is currently unacceptable to the expressers (Fischer & Manstead, 2008). In a group setting, expressions of anger may therefore draw attention to the social distance between the deviant and the rest of the group. Furthermore, the evidence discussed above suggests that expressions of anger precede or accompany social exclusion in groups. Given that humans are highly sensitive to the safety of their belonging in groups (Baumeister & Leary, 1995; Kerr & Levine, 2008; Smart Richman & Leary, 2009; Williams, 2007; Williams, Cheung, & Choi, 2000), the majority's expressions of anger may therefore create the perception that one's belonging in the group is under threat. Hence, we predict that a majority's expression of anger will cause the deviant individual to feel rejected by the group.

Conformity in Response to the Majority's Emotional Expressions

By affecting the extent to which a deviant individual feels accepted or rejected, the majority's emotional reaction may allow the deviant individual to remain deviant, or motivate the individual to conform. When the majority expresses happiness in response to deviance, and the deviant individual feels accepted in turn, the deviant is not likely to change his/her behavior, and can therefore be expected to persist in deviance. In the case of an angry reaction, however, the deviant will feel rejected, and the deviant will therefore be motivated to restore the sense of belonging. One way to do this, is by conforming to the majority's position.

Conformity can be defined as the act of adjusting one's overt behavior in such a way that it becomes more in line with the apparent group norm (for a similar definition, see Nail, MacDonald, & Levy, 2000). Although conformity may be attributed to various motives (e.g., Cialdini & Goldstein, 2004; Deutsch & Gerard, 1955), the resulting overt behavior is similar: Conformity involves movement toward the group norm. From the group's point of view, the most important consequence of behavioral conformity is that a deviant's challenge to the group's position is removed. Thus, by conforming, a person can show a commitment to the group's identity (i.e., identity performance; Klein, Spears, & Reicher, 2007) and group goals, which may increase acceptance from the group (cf. Hollander, 1960; Moreland & Levine, 1989, 1994). Conformity can therefore be seen as strategic behavior aimed at gaining acceptance in a group. This idea is illustrated by prior research. For instance, Asch (1956), in an experiment in which participants had to choose which of three lines was the shortest, showed that even if people are really certain of their own judgment, they conform to the clearly erroneous opinion of a majority. Similarly, in her theory of the spiral of silence, Noelle-Neumann (1974, p. 43) observed that "To the individual, not

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isolating himself is more important than his own judgment.” This may lead individuals holding deviant opinions to be reluctant to speak out in anticipation of negative reactions (i.e., conformity by omission; Cialdini & Trost, 1998).

Several studies suggest that conformity is especially likely if one feels motivated to seek acceptance from a group, and if conformity can be observed by this group. For instance, Dittes and Kelley (1956) showed that participants who felt rejected by their group publicly conformed more to the judgments of their groups than did participants who felt less rejected. In another study, peripheral group members (who experienced insecure status within their group) strategically exhibited greater conformity when their responses were made public to an ingroup audience than when their responses remained private (Jetten, Hornsey, & Adarves-Yorno, 2006). Similarly, DeWall (2010) showed that people who were led to expect that they would have a lonely future (Twenge, Catanese, & Baumeister, 2003) changed their attitudes to be congruent with the opinions of their peers (see also Lakin & Chartrand, 2003). Thus, conformity is likely if a person feels rejected, is motivated to seek acceptance in a given group, and if conformity is likely to elicit acceptance because it will be both perceived and appreciated by the group.

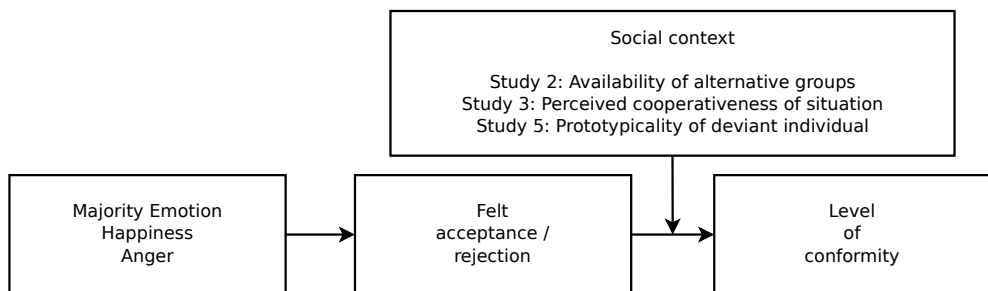


Figure 4.1. General Theoretical Model

The Present Research

The theoretical model guiding this research is depicted in Figure 4.1. The first path in the model represents our hypothesis that a deviant individual will feel rejected if the majority expresses anger about his/her deviance, whereas the deviant individual will feel accepted if the majority expresses happiness. The second path shows how this subjective sense of acceptance or rejection, in turn, affects the behavior of the deviant individual. We expect that a happy reaction does not motivate behavioral change, or elicits further deviance, as it makes the deviant feel that his/her deviant behavior is acceptable. Feeling rejected after an angry reaction, on the other hand, might motivate the individual to seek ways to restore the sense of belonging. In light of the view of conformity as strategic behavior aimed at gaining acceptance in a group (e.g., Asch, 1956; Noelle-Neumann, 1974), we propose that whether a deviant individual will

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conform to the majority position after an angry reaction from the group depends on the extent to which (1) the deviant is motivated to (re)gain acceptance in the group, and (2) conformity is a possible means to this end. We examined these ideas in five studies.

In Study 4.1, we test the basic idea that emotional expressions are interpreted as signals of an individual's inclusionary status using a vignette approach. Then, we test the influence of the motive to be reaccepted by manipulating the availability of alternative groups in another vignette study, Study 4.2. Next, we use a critical incidents paradigm to test whether happiness and anger are associated with differences in the perceived pressure to conform, and whether this association is affected by the extent to which the situation is perceived as cooperative or competitive, as this determines whether conformity is an effective means to gain acceptance. We also test if felt acceptance or rejection can account for this association (Study 4.3). In Study 4.4, we extend and replicate these findings in a cooperative group task involving real interaction and a behavioral outcome measure. Finally, we test the influence of the extent to which one's status as a group member is secure, as another factor determining the motive to be reaccepted, using a simulated group interaction, and we test whether emotional expressions produce conformity that lasts over time (Study 4.5). The specific hypotheses concerning these moderators will be developed in the introductions to the respective studies.

On a statistical note, we use variants of regression analysis (in the statistical computing software R 2.15.1; R Core Team, 2012) for all of our analyses. There are two reasons for this choice. First, regression analysis can accommodate both dichotomous (Studies 4.2 and 4.5) and continuous (Studies 4.1, 4.3, 4.4, and 4.5) dependent variables, and allows us to do multilevel analysis (Study 4.4), thereby allowing for statistical consistency across studies. Second, regression coefficients are necessary for conducting the (moderated) mediation analyses that are required to test our theoretical model (Preacher, Rucker, & Hayes, 2007). By focusing on regression output from the outset, we avoid reporting redundant statistical analyses. To facilitate interpretation, we also report means and standard deviations wherever comparisons between groups are made. Finally, with regards to hypothesis testing, we use one-tailed tests to test directional hypotheses and two-tailed tests in all other cases. Whenever a one-tailed test is used, this is explicitly noted in the text.

Study 4.1

In Study 4.1, our aim was to establish the hypothesized relation between majority emotions and felt acceptance and rejection by a deviant group member. Participants imagined themselves in a group in which a majority reacted with anger, happiness, disappointment, or no emotion to their own deviant opinion. We measured the extent to which participants would feel accepted or rejected from the group as a result of this emotional expression. We expected that participants would report feeling more

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rejected after an angry reaction than after a neutral reaction, whereas participants were expected to feel more accepted after a happy reaction than after a neutral reaction. The disappointment condition was included to rule out that any effects of majority anger on feeling rejected could be attributed to the reaction being generally negative in nature, and we expected participants to feel less rejected after a disappointed reaction than after an angry reaction.

Method

Participants and design. One hundred and fifteen individuals (26 male, 88 female, 1 missing demographic information, $M_{age} = 21.03$, range 17 – 54 years)¹ took part in the experiment, which was part of a test battery in which first-year psychology students participated to fulfill a course requirement. Participants were randomly assigned to receive one of four emotional reactions from the majority: anger, happiness, disappointment, or neutral (i.e., no emotion).

Materials and procedure.

Vignette. Participants first read a short vignette that described a group situation in which the majority's emotion was manipulated. The protagonist (same sex as the participant) had come together with three same-sex friends to discuss and decide on their vacation destination. All three friends shared a preference for one destination, while the protagonist had picked a different destination. Thus, the situation resembled a standard conformity paradigm (e.g., Asch, 1956) with a majority of modal size (Bond, 2005). The story ended with "When it's your turn, you tell the others where you'd like to go. Your friends don't immediately agree with you ...", followed by "...and react with anger" (Anger condition), "...but react with enthusiasm" (Happiness condition), "...and react disappointed" (Disappointment condition), or "...and react neutral" (Control condition). We used the word "enthusiasm" (*enthousiasme* in Dutch) instead of "happiness" (*blij*) because it was more ecologically valid in this situation. Although "enthusiasm" may imply slightly more arousal than "happiness" according to intrapersonal affect circumplex models (e.g., Russell & Feldman Barrett, 1999), they can be grouped into the same "affiliative" family of emotions based on their comparable interpersonal effects (Van Kleef, De Dreu & Manstead, 2010; we return to this issue in the General Discussion).

Acceptance/Rejection scale. After participants had imagined themselves in the situation, we measured the extent to which they felt accepted or rejected using a 4-

¹ In all experiments reported in this article, we checked whether the genders were balanced over condition as a precondition to running our analyses. Although the low number of males in all studies did not permit us to conduct analyses using participant gender reliably, explorative inclusion of this factor in the discussed models revealed only isolated indications of effects of participant gender, none of which challenged our main conclusions. We therefore do not discuss this variable in any of our studies.

item scale that was similar to other scales developed for this purpose (e.g., Williams & Sommer, 1997; Williams et al., 2000; Wesselman, Butler, Williams, & Pickett, 2010). The items were “Due to the group’s reaction, I feel rejected”, “The group’s reaction makes me feel alone against the rest”, “The group’s reaction makes me feel accepted”, “Due to the group’s reaction, I feel supported” (the latter two items being reverse-scored). Items were answered on a 7-point scale (1 = *not at all* to 7 = *very much*). Reflecting our bipolar conceptualization of this dimension, scores above the midpoint of the scale (4) indicate rejection and scores below the midpoint of the scale indicate acceptance. A principal factor analysis confirmed the unidimensionality of the scale (all factor loadings on the first factor above .69) and the reliability of the scale was good (Cronbach’s $\alpha = .84$). The aggregate score was calculated by averaging the items.

Manipulation checks. To check whether the manipulation of majority emotion had been successful, the experiment ended by asking the participant to which extent the group had reacted with enthusiasm, anger, and disappointment to their proposal (1 = *not at all* to 7 = *very much*).

Results

Manipulation check. Manipulation checks confirmed that the majority reaction was perceived as more angry when it had been described as angry ($M = 5.48$, $SD = 1.96$) compared to when it had been described as neutral ($M = 2.60$, $SD = 1.48$, $\beta = -1.39$), enthusiastic ($M = 1.90$, $SD = 1.21$, $\beta = -1.73$), or disappointed ($M = 2.77$, $SD = 1.50$, $\beta = -1.31$), all $|t|s > 6.4$, all $ps < .001$ (1-tailed). Similarly, the majority reaction was perceived as more enthusiastic when it had been described as enthusiastic ($M = 5.53$, $SD = 1.59$) than when it had been described as neutral ($M = 2.73$, $SD = 1.57$, $\beta = -1.41$), angry ($M = 2.34$, $SD = 1.56$, $\beta = -1.61$), or disappointed ($M = 2.50$, $SD = 1.10$, $\beta = -1.53$), all $|t|s > 7.3$, $ps < .001$ (1-tailed). Finally, the majority reaction was perceived as more disappointed when it had been described as disappointed ($M = 4.92$, $SD = 2.15$) compared to when it had been described as neutral ($M = 2.60$, $SD = 1.45$, $\beta = -1.20$), enthusiastic ($M = 2.17$, $SD = 1.49$, $\beta = -1.43$), or angry ($M = 3.31$, $SD = 1.49$, $\beta = -0.84$), all $|t|s > 3.6$, $ps < .001$ (1-tailed). Hence, the manipulation was successful.

Acceptance/Rejection. To test whether the majority emotion had affected the extent to which participants felt accepted or rejected, the effects of the emotion manipulations were tested against the neutral control condition. As expected, after an angry reaction, participants reported feeling more rejected ($M = 4.65$, $SD = 1.14$) than after a neutral reaction ($M = 3.84$, $SD = 1.04$), $\beta = 0.66$, $t = 2.95$, $p = .002$ (1-tailed). Also as predicted, after an enthusiastic reaction, participants felt less rejected (i.e., more accepted, $M = 2.91$, $SD = 1.03$), $\beta = -0.77$, $t = -3.45$, $p < .001$ (1-tailed) than after a neutral reaction. Finally, a disappointed reaction ($M = 4.06$, $SD = 0.95$) did

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not arouse stronger feelings of rejection than a neutral reaction, $\beta = 0.18$, $t = 0.77$, $p = .44$. Additional independent t -tests revealed that, as expected, participants in the disappointed condition reported feeling less rejected than participants in the angry condition ($t(53) = -2.06$, $p = .02$, 1-tailed). They also felt more rejected than participants in the happy condition ($t(54) = 4.31$, $p < .001$).

Discussion

In Study 4.1, we showed that in a situation in which one disagrees with the majority, one feels less accepted (i.e., more rejected) if the majority expresses anger, whereas one feels more accepted if the majority expresses happiness. Furthermore, the finding that one does not feel more rejected if the majority expresses disappointment compared to a neutral reaction, and feels less rejected after a disappointed compared to an angry reaction, suggests that not all negative emotional reactions lead to feelings of rejection. These findings support the basic assumption underlying the present research, namely that happiness and anger are signals of one's inclusionary status. Now that this basic effect is established, the question is how expressions of anger versus happiness influence the deviant individual's behavior.

Study 4.2

Being rejected is a painful experience, which may fuel two very different behavioral tendencies. On the one hand, feelings of rejection may inspire negative views of the group, undermine identification, and lead people to leave their group (Williams, 2007; see also Moreland & Levine, 1989, 1994). On the other hand, being rejected also constitutes a threat to the sense of belonging (Baumeister & Leary, 1995), which motivates people to look for ways to restore belonging (Maner et al., 2007), for instance by conforming to the majority position. Whether people leave the group or conform to the group in such cases likely depends on whether membership in an alternative group is readily available. Consistent with the idea that feeling rejected can prompt people to seek belonging in a different group, Williams et al. (2000) showed that people, after having been ignored by two other participants in a virtual ball-throwing game, conformed more to the unanimously incorrect decisions of an alternative group. Yet, if there is no viable alternative to the current group, we predict that people will feel pressured to conform to their *current* group as there is no other way to restore their sense of belonging.

Based on these considerations, Study 4.2 aimed to investigate whether emotions expressed by a majority influence the choice between conforming to the current group and leaving the group. For this purpose, the scenario from Study 4.1 was modified to manipulate the availability of alternative groups in addition to the emotion expressed by the majority. We hypothesized that this choice would depend on the availability of alternatives: If alternatives are available, the likelihood of exiting the group should be

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higher for people who receive an angry reaction (and therefore feel rejected) than for people who receive a happy reaction (and therefore feel accepted). When no alternatives are available, people should choose to remain in the group, regardless of whether they feel rejected. A further aim was to find out whether any influence of perceived majority emotions on behavior would be mediated by felt acceptance and rejection.

Method

Participants. Seventy-three participants (18 male, $M_{age} = 21.04$, range 18 – 44 years) were recruited for the experiment in exchange for 7 euro or partial course credits. Participants were randomly assigned to one of the conditions of a 2 (alternatives available: yes or no) x 2 (majority emotion: anger or happiness) between-subjects design.

Materials and procedure.

Vignette. The vignette was adapted from the one used in Study 4.1. In this version, the introduction explained that the protagonist had just started studying in a different city, where s/he hardly knew anyone. To manipulate the availability of alternatives, the story then read “You hardly know anyone in your new study group and you haven’t met any fellow students that you like so much that you’d like to go on vacation with them.” (No Alternatives condition), or “You have met some fellow students whom you like and when you were recently discussing vacations, you had the impression that everyone would be interested in going on vacation together.” (Alternatives condition). The story then continued as in Study 4.1.

Acceptance/Rejection scale. We used the same 4-item scale as in Study 4.1 (Cronbach’s $\alpha = .89$).

Conforming vs. leaving the group. Participants were asked to choose between two alternatives: (a) conforming to the group, while abandoning one’s own destination (“Abide by the majority”), or (b) attempting to find other people to go on vacation with (“Go on vacation with others”). These options were presented as two buttons on the screen, forcing a choice between these alternatives.

Manipulation checks. The manipulation of the availability of alternatives was checked using three items, e.g. “Except for my friends from high school, there is nobody I could go on vacation with” (1 = *strongly disagree* to 7 = *strongly agree*, Cronbach’s $\alpha = .82$). Two more items checked to which extent the group had reacted with happiness and anger to their proposal (1 = *not at all* to 7 = *very much*).

Results

Manipulation checks. As intended, participants reported having received a more angry reaction when the reaction had been described as angry ($M = 5.50$, $SD =$

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1.31) compared to when it had been described as happy ($M = 2.15$, $SD = 1.31$), $\beta = 0.73$, $t(71) = 9.12$, $R^2 = .54$, $p < .001$ (1-tailed). Similarly, participants indicated that the reaction had been more happy after the reaction had been described as happy ($M = 4.44$, $SD = 1.17$) as opposed to angry ($M = 1.94$, $SD = 1.04$), $\beta = 0.75$, $t(71) = 9.58$, $R^2 = .56$, $p < .001$ (1-tailed). Finally, participants indicated that there were more alternative groups that they could go on vacation with in the Alternatives condition ($M = 5.98$, $SD = 0.76$) than in the No Alternatives condition ($M = 4.30$, $SD = 1.73$), $\beta = 1.06$, $t(71) = 5.30$, $R^2 = .28$, $p < .001$ (1-tailed). None of the manipulations affected the check for the other manipulation and no interactions were found on any of the manipulation checks. Thus, the manipulations were successful.

Acceptance/Rejection. As in Study 4.1, participants felt more rejected after the majority had expressed anger ($M = 4.99$, $SD = 1.02$) than after the majority had expressed happiness ($M = 2.85$, $SD = 1.01$), $\beta = 0.73$, $t(71) = 8.99$, $R^2 = .53$, $p < .001$ (1-tailed). There were no main or interaction effects involving alternatives.

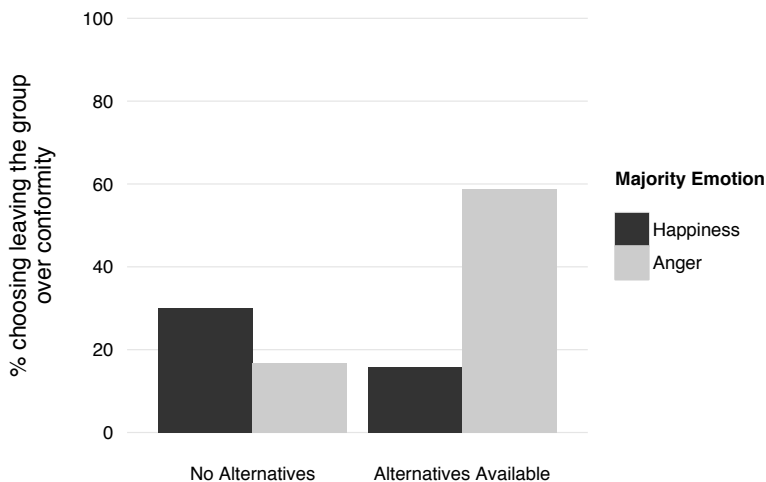


Figure 4.2. Proportion of participants choosing leaving the group over conforming (Study 4.2).

Conforming vs. leaving the group. As can be seen from Figure 4.2, the choice between conforming to the group or leaving the group depended on both the availability of alternatives and the emotion expressed by the majority. Using probit

regression,² the choice between conforming and leaving the group was regressed on the manipulations. As expected, the interaction was significant, $B = -1.76$, Wald's $z = -2.68$, $p = .004$ (1-tailed). To interpret this interaction, simple slopes of the majority emotion manipulation were calculated within the Alternatives and No Alternatives conditions (Aiken, West, & Reno, 1991). As expected, if an alternative group was available, fewer participants chose conformity after an angry reaction (6 out of 16, 37.50%) than after a happy reaction (16 out of 19, 84.21%), $B = 1.32$, Wald's $z = 2.80$, $p = .003$ (1-tailed). When no alternative group was available, the emotions expressed by the majority did not affect the choice between conformity and leaving the group (Anger: 15 out of 18, 83.33%, Happiness: 14 out of 20, 70.00%), $B = -0.44$, Wald's $z = -0.97$, $p = .33$. Thus, when no alternatives were available, participants generally preferred staying in the group even if that meant yielding to the majority's position, but when alternatives were available, anger expressed by a majority increased the chance that participants would prefer to leave the group.

Mediation analysis. To investigate whether feeling rejected after an angry reaction could explain the choice between conforming and leaving the group, depending on the availability of alternatives, we conducted a moderated mediation analysis (Preacher et al., 2007). A moderated mediation analysis estimates the strength of the indirect effect of an independent variable on a dependent variable through a mediator separately at different values of the moderator. The choice between conforming (0) or leaving the group (1) was the dependent variable, and was specified so that higher coefficients of the predictor variables indicate a higher likelihood of leaving the group relative to conforming.³ The emotion manipulation served as the independent variable, perceived rejection as the mediator, and we used availability of alternatives as the moderator of the path from feeling rejected to the choice between conforming or leaving the group (see Figure 4.1 for the general model that was tested). The significance of the indirect effects was determined by bootstrapping (10000 resamples in total). Calculating a coefficient estimate based on the likelihood of one response category over another in case one of the cells in the design is empty is, in effect, a division by zero, which yields coefficient estimates that approach infinity. As such estimates are obviously incorrect, resamples of the dataset with empty cells were dropped from the distribution of indirect effects. The estimates are therefore based on the remaining resamples ($R = 9067$). In this and all remaining mediation analyses, both 95% bias-corrected and accelerated (BC_a, Efron, 1987) confidence intervals and non-parametric p -values are reported. These p -values are based on the

² Using the logit instead of the probit link function for these analyses, the reported p -values are virtually identical (deviations in the .005-.01 range in both directions). The interpretation does not change.

³ For this analysis, R was programmed according to Preacher et al.'s (2007) recommendations, and checked in personal communication with Andrew F. Hayes (May 2011).

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proportion of the distribution of indirect effects on either side of 0 (indicating no mediation) and are therefore uncorrected.

The results of the analysis indicated moderated mediation. When no alternatives were available, 0 was enclosed in the confidence interval of the indirect effect, indicating that any effects of the majority emotion manipulation on the choice between conforming and leaving the group were not mediated by felt acceptance/rejection, $\beta = -0.21$, 95% BC_a CI: [-1.27, 0.81], $p = .74$ (1-tailed). When alternatives were available, however, 0 fell outside of the confidence interval of the indirect effect, indicating that the choice between conforming and leaving the group was mediated by feeling accepted vs. rejected due to the majority's emotions, $\beta = 1.09$, 95% BC_a CI: [lower limit: 0.31]⁴, $p = .002$ (1-tailed). It can be concluded that although all participants felt more rejected after an angry reaction, this only led them to leave the group if an alternative group was available. When no alternatives were available, feeling rejected did not affect the choice between conforming and leaving the group.

Discussion

In this study, we replicated the finding that a deviant who receives an angry reaction from a majority feels more rejected than a deviant individual who receives a happy reaction. Furthermore, we showed that the availability of alternatives determines whether this person will stay in the group or leave after receiving an angry reaction. When no alternatives to the current group are available, showing good group membership by conforming is the likely option as this helps resolve the threat to belonging when experiencing feelings of rejection. If membership in an alternative group is available, the deviant is likely to leave the group after an angry reaction. Happiness, on the other hand, leads to feeling accepted, which appears to keep people committed to the group.

After a happy reaction, participants in this study almost invariably chose conformity over leaving the group. As conformity was contrasted with leaving the group, the preference for conformity after a happy reaction may reflect a heightened desire to remain in the group, rather than a desire to regain acceptance. Based on this research, we cannot determine which of these explanations can account for the behavior of participants who received a happy reaction. Therefore, in the last three studies, we employed measures of conformity that were independent of the choice between staying in the group or not. Additionally, we switched to different paradigms to overcome the limitations of the vignette paradigm, which taps into naïve theories

⁴ This notation indicates a one-sided confidence interval that is used to test a directional hypothesis. The notation [lower limit: X] indicates that there is a 95% confidence that the test statistic falls between X and positive infinity. If the hypothesis predicts a positive relation, and X is greater than zero, the hypothesis is supported.

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about the effects of emotions (cf. Parkinson & Manstead, 1993) and may therefore produce slightly different results than actual reactions to emotions that surface in reaction to deviance in groups. Thus, the last three experiments used more realistic settings to test how a majority's angry and happy reactions to deviance shape conformity.

Study 4.3

In this study, we investigated in which situations the majority's emotional expressions can pressure deviant individuals to conform by inducing feelings of acceptance versus rejection. As argued in the introduction, whether or not feeling rejected leads to conformity critically depends on the extent to which conformity is a meaningful way of showing that one is a good group member. In cooperative settings, coordinated action is required for groups to achieve their shared goals, and deviance may threaten effective goal pursuit. This implies that especially in cooperative settings, good group membership may be communicated by showing commitment to the group's goals and a willingness to conform to further the group's interests (Cialdini & Trost, 1998; Dirks, 1999; Mayer, Davis & Schoorman, 1995). In line with this reasoning, previous research indicates that conformity is indeed more likely to the extent that (positive) interdependency (i.e., cooperativeness) is perceived among the group members (Berkowitz, 1957). We therefore propose that feeling rejected makes people conform in situations they perceive as cooperative, but not in situations that are perceived as competitive. We expect that when a deviant individual perceives the situation as cooperative, this person will feel pressure to conform in case the majority reacts with anger to their deviance. In competitive settings, on the other hand, an individual cannot show commitment to a group goal by conforming, as there are conflicting goals in the group. The majority's anger may even signal that the individual is reaching his or her goals at the expense of the pursuit of other people's goals (Lanzetta & Englis, 1989), which may motivate him or her to stay the course. Thus, we expect that a deviant individual is less likely to feel the pressure to conform if the majority responds with anger in a situation that this person perceives as competitive.

We investigated the role of the perceived cooperativeness of the situation by asking participants to recall a situation in which their opinion had differed from that of other group members. They were then asked to report the emotions expressed by the majority, and to reflect on the type of situation in terms of cooperation/competition. Conformity was measured by asking people to which extent they experienced a pressure to conform in the situation. We preferred this measure over asking participants whether they actually conformed, because people are generally reluctant to overtly admit their conformity to a group. For instance, Asch's participants blamed their conformity on their own vision, rather than on the group pressure experienced during the experiment (Asch, 1956). Furthermore, there is evidence that people

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distort their memories of an act of conformity to make it appear as though they initially agreed (Griffin & Buehler, 1993). We assumed that this pressure to conform would reflect the subjective experience of threat or anxiety (Berns, Capra, Moore, & Noussair, 2010) that is ultimately resolved by conforming to the group, and that it would therefore be a good proxy of conformity in the situation. Finally, we tested whether any effects of majority emotions on conformity pressure were mediated by perceived rejection.

Method

Participants. Sixty-eight participants were recruited for a study on disagreement in groups. Four participants indicated that they were unable to recall and describe an incident in which their opinion had differed from a group's consensus, and their data could therefore not be used. The final sample consisted of 18 male and 46 female participants ($M_{\text{age}} = 22.11$, range 18-50 years). They were compensated with course credits or 7€.

Materials and procedure.

Critical incident prompt. Upon arriving in the laboratory, participants were seated individually behind a computer, which was used for presenting all instructions and recording answers. After completing a number of unrelated personality measures, the critical incident prompt was displayed on screen. Participants were asked to recall an episode in which a group decision had to be made and their opinion had differed from that of the group. They were asked to describe as many details of the situation as they could.

Acceptance/Rejection. After participants had described the situation, the experiment continued by prompting the participant to indicate on a bipolar 7-point scale (1 = *rejected* and 7 = *accepted*) how they had felt in the situation they just described. The scale was reversed for use in the analyses, such that higher scores indicate stronger feelings of rejection.

Majority emotions. The emotions expressed by the majority were measured using a list of 26 affective states.⁵ The items were presented in random order and the participant was asked to indicate on 7-point scales (1 = *not at all* to 7 = *very much*) how much of the respective emotion had been shown by the majority. An initial attempt to reduce the number of emotions measured by this questionnaire using principal factor analysis showed that the factor structure was highly dependent on which items were included in the analysis. Therefore, we restricted our analysis to the

⁵ The full list is jealousy, disappointment, shock, suspicion, disgust, tense, anger, boredom, contempt, sorry, guilt, nervousness, enthusiasm, happiness, surprise, compassion, relaxation, contentment, fear, relief, irritation, shame, amusement, schadenfreude, indifference, interest.

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6 items related to happiness and anger, which were two clusters that emerged consistently in all factor analyses. Both the point of inflexion in the scree plot and Kaiser's criterion agreed on 2 as the optimal number of factors. Focusing on these two factors, maximum likelihood factor analysis using Varimax rotation resulted in a clear distinction between 'enthusiasm', 'happiness', 'contentment', and 'amusement' on the one hand, and 'anger' and 'irritation' on the other (see Table 4.1). The first factor was labeled as 'happiness' (Cronbach's $\alpha = .83$), and the second as 'anger' ($r = .70$, $p < .001$). The emotion clusters were aggregated by averaging.

Table 4.1: Factor loadings of reported majority emotions on two principal factors after Varimax rotation (Study 4.3).

	Happiness	Anger
Happy	.79	
Content	.79	
Enthusiastic	.73	
Amused	.63	
Irritated		.91
Anger		.75

Cooperativeness. Perceived cooperativeness of the situation was measured using three items. Two of these items ("To what extent did you pursue personal goals that differed from the group's goals" and "To what extent did your goals conflict with the group's goals", both reverse coded) asked about the goal structure without directly referring to cooperation and competition, and were answered on 7-point scales (1 = *not at all* to 7 = *very much*). A third item directly asked how cooperative or competitive the situation had been on a bipolar 5-point scale, anchored by 1 = *competitive*, 3 = *neutral*, and 5 = *cooperative*. The scale composed of these items was internally consistent (Cronbach's $\alpha = .68$), and their average was calculated after z-transforming the individual items to correct for the different response scales.

Conformity pressure. At the end of the experiment, we asked participants to what extent they had felt pressure to change their opinion or behavior in line with the group (1 = *none at all* to 7 = *very much*).

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Results

Only four of the 68 participants were unable to recall an instance in which their opinion had differed from the majority's, which suggests that the kind of situation under investigation is quite common. We found that a broad variety of situations was reported. Overall, many situations resembled the situation that we described in the vignettes used in Studies 4.1 and 4.2. To give an impression of the kind of stories that our participants wrote, we give two examples here:

We wanted to buy a car to go on vacation with. I wanted a somewhat more expensive car, so we could sell it for more or less the same value after our vacation. I also liked the luxury and comfort of a better car. And the risk of a car breakdown would be smaller as well. The others wanted a cheap car though, so we wouldn't have to worry about keeping it neat and would maybe be able to keep it. We had quite some discussion, and finally we decided to go for the cheaper car, so that's the one we have now. All of us, including myself, are pleased with it.

Quite a few situations were much less cooperative and friendly, as this story shows:

When I was in high school, we had to do a scientific project in groups of four students. I was in a group with three of my friends, and we were talking about the topic for our project. I didn't find the topics they proposed very interesting, I really wanted a topic that I found interesting and that I could find out more about. So when I proposed my topic (something related to parapsychology), they just laughed at me. Then, I tried to persist because I wanted to show them it is not such a stupid topic. They really didn't want my topic, and I didn't really want theirs. [...] In the end, one of the other group members agreed with me and the group split. Even outside of class, we got into arguments about nothing. I was angry about their reaction and I found them childish. In the end, the subgroups worked almost in isolation on two topics that were only minimally related.

Acceptance/Rejection. The extent to which participants felt rejected was predicted by anger and happiness both separately and simultaneously. When acceptance/rejection was regressed on both emotions simultaneously, the results indicated that, as expected, the more the majority reaction had been angry, the more participants felt rejected, $\beta = 0.47$, $t(61) = 4.32$, $R^2_p = .23$, $p < .001$ (1-tailed). Also as expected, the happier the reaction from the majority had been, the less participants

had felt rejected (i.e., more accepted), $\beta = -0.20$, $t(61) = -1.86$, $R^2_p = .07$, $p = .03$ (1-tailed). No interactions with the cooperativeness of the situation were found ($|t|s < .58$, $ps > .55$).

Conformity pressure. As expected, the relation between majority emotions and conformity pressure depended on the perceived cooperativeness of the situation. When conformity pressure was regressed on the interactions between majority emotions and the perceived cooperativeness of the situation, both the anger \times cooperativeness ($\beta = -0.35$, $t(58) = -1.82$, $p = .04$, 1-tailed) and the happiness \times cooperativeness ($\beta = 0.32$, $t(58) = 1.97$, $p = .03$, 1-tailed) interactions emerged as significant predictors. In cooperative settings (+1 *SD*), perceived conformity pressure increased as the amount of anger expressed by the majority increased (simple effect: $\beta = 0.51$, $t(58) = 2.03$, $p = .02$, 1-tailed), and the amount of happiness expressed by the majority decreased (simple effect: $\beta = -0.40$, $t(58) = -1.89$, $p = .03$, 1-tailed). In competitive settings (-1 *SD*), no relation between majority emotions and perceived conformity pressure was found (simple effect anger: $\beta = -0.19$, $t(58) = -0.85$, $p = .40$; simple effect happiness: $\beta = 0.24$, $t(58) = 1.19$, $p = .24$).

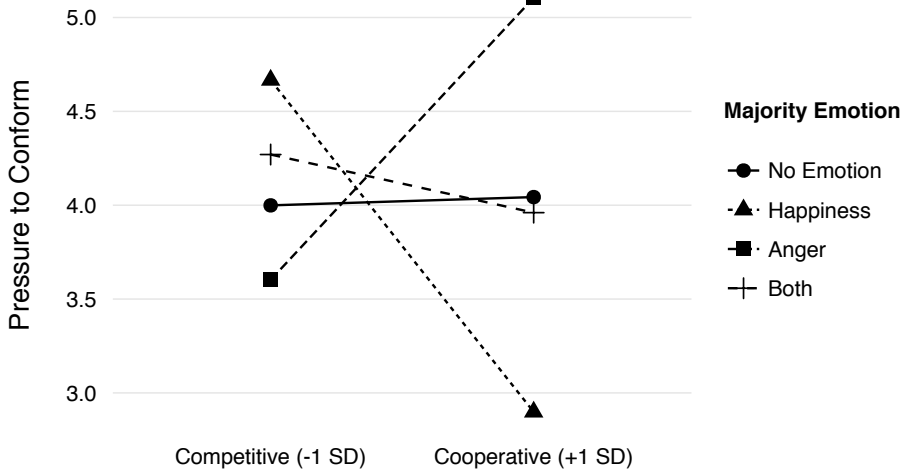


Figure 4.3: The relation between the majority's anger and happiness and conformity pressure in situations perceived as relatively cooperative and competitive. Note: Two independent effects were combined to illustrate the additive effects of anger and happiness in relation to conformity pressure (Study 4.3).

The independent measurement of anger and happiness allowed interpreting the effects of both emotions jointly. Combining the above information, conformity pressure was highest in cooperative situations in which the majority expressed anger

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and little happiness, and least conformity pressure was found in cooperative settings in which the majority expressed happiness and little anger (see Figure 4.3). Conformity pressure in situations perceived as competitive, and in situations in which both emotions were equally present, was at intermediate levels. Thus, consistent with the hypotheses, it is in situations perceived as cooperative that more anger is associated with more conformity pressure, and more happiness is associated with less conformity pressure.

Mediation analysis. To find out whether felt rejection could account for the relation between majority emotions and conformity pressure in situations perceived as cooperative, a moderated mediation analysis was conducted (Preacher et al., 2007; see also Study 4.2). The indirect effects of majority emotions on conformity pressure through acceptance/rejection were estimated separately for anger and happiness. The perceived cooperativeness of the situation was tested as the moderator of the path between acceptance/rejection and conformity pressure (see Figure 4.1 for the general model). Because the cooperativeness of the situation was a continuous variable, we adopted an approach similar to simple slope analysis (Aiken et al., 1991). We calculated BC_a confidence intervals after bootstrapping ($R = 10000$) at moderator values one standard deviation above and below the mean. These values thus reflected relatively cooperative and competitive situations, respectively. Our hypothesis that felt acceptance/rejection would mediate the path from majority emotions to conformity pressure in situations seen as cooperative was supported for both anger ($B = 0.19$, 95% BC_a CI: [lower limit: 0.08], $p = .002$, 1-tailed) and happiness ($B = -0.17$, 95% BC_a CI: [upper limit: -0.04], $p = .008$, 1-tailed). In situations seen as more competitive, neither the effect of anger ($B = -0.09$, 95% BC_a CI: [-0.24, 0.04], $p = .15$) nor the effect of happiness ($B = 0.07$, 95% BC_a CI: [-0.04, 0.26], $p = .20$) on conformity pressure was mediated by felt acceptance/rejection. Together, these findings indicate that in situations perceived as cooperative, the higher conformity pressure experienced when the majority expressed more anger and/or less happiness was due to the fact that the group member felt rejected. In situations perceived as competitive, the majority's angry and happy reactions to deviance were still associated with felt acceptance/rejection, but no relation with felt conformity pressure was found.

Discussion

The results of this study replicate our finding that majority's emotions are associated with the extent to which a deviant individual feels accepted or rejected. Furthermore, consistent with our motivational perspective on conformity, we showed that in situations that are perceived as cooperative, more conformity pressure was experienced to the extent that more anger and less happiness were expressed. Furthermore, supporting our general model (Figure 4.1), this relation was mediated by feelings of rejection. In situations perceived as competitive, we did not find this

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relationship, which is congruent with the idea that conformity is not a meaningful way of showing good group membership in a competitive setting. Most importantly, we found these results across a wide range of social situations, which increases confidence in the generalizability of the findings from Studies 4.1 and 4.2.

Although the critical incidents approach allows for high ecological validity and a test of our hypotheses based on people's recollections of actual situations, it also has several drawbacks, most importantly that it yields only correlational data. To address these limitations we set out to replicate and extend these findings in two behavioral experiments.

Study 4.4

In the previous studies, we showed that a majority's anger leads a deviant individual to feel rejected, which in turn may lead this individual to experience a pressure to conform. In Study 4.4, we aimed to extend these findings by investigating whether or not anger, expressed in a cooperative setting, can lead to behavioral conformity by inducing feelings of rejection. For this purpose, we conducted an experimental group study in which groups, consisting of three participants, worked on a group problem-solving task. We manipulated the emotion expressed by the majority by instructing two of these participants to express either anger or happiness in response to ideas voiced by the third participant. A non-emotional condition, in which participants were instructed not to show their emotions, was also included as a reference condition.

In this study, conformity was operationalized as the relative influence of this third participant (faced with either a happy or an angry majority) on the outcome of the group task. We reasoned that if being faced with an angry majority leads to feeling rejected, which in turn leads to conformity, the influence of the two angry group members should be relatively high relative to the third participant's influence. Thus, we expected participants who were faced with an angry majority to have relatively less influence in their group than participants who were faced with a happy majority, or those in the non-emotional condition.

Method

Participants and design. Thirty-three groups (99 participants, 22 male, $M_{age} = 20.99$, range 15 – 29) participated in the experiment, which was advertised as a group creativity task. In exchange for their participation, participants received either course credit or €10.50. Because we were concerned that familiarity between participants would hinder the effectiveness of the emotion manipulation, we invited four participants for each session, which allowed us to assign an individual backup task to a participant who coincidentally knew another participant (otherwise, a die roll decided which participant would receive different tasks). A check at the end of the experiment

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(scale ranging from “Never seen this person” to “Best friend”) confirmed that in the final sample, no pair of participants indicated more mutual familiarity than “Seen, but not spoken to this person”.

Groups were randomly assigned to one of three conditions: Majority Angry, Majority Happy, or Majority Non-Emotional. Within groups in the former two conditions, two randomly selected participants received an emotion instruction, and the remaining participant (the “focal participant,” see below) received instructions to show no emotion. In the Non-Emotional condition, all three participants received the no emotion instruction. The only exception to this random assignment was that the manipulation was never aligned with salient demographic characteristics to avoid creating a salient diversity faultline (Homan, van Knippenberg, Van Kleef, & De Dreu, 2007b). For instance, if the group consisted of one female and two male participants, it was always one of the male participants who received the no emotion instruction.

Materials and procedure. The experiment consisted of a modified version of the Desert Survival Task (Lafferty, 1974), which is a problem-solving task that is used in group research. In the original version of the task, the goal is to rank a list of items (e.g., a knife) according to the extent to which they may help promote chances of survival if a person is stranded in the desert. We used the Homan, van Knippenberg, De Dreu, and Van Kleef (2007a) version of this task, in which participants do not receive a pre-existing list of items, but generate items themselves. By having participants first generate items individually, followed by group-wise selection of the best ideas with the individual lists as input, we could estimate the extent to which the emotions expressed in the group influenced individual contributions to the group product.

Item Generation. Upon arrival in the laboratory, the three group members were seated separately, and filled out a number of personality questionnaires that were unrelated to the present hypotheses. These questionnaires were followed by an introduction to the Desert Survival situation and an instruction to generate as many items as possible that could be useful in this situation. The only constraint was that it should be possible for one person to carry the item. Participants were given 10 minutes to generate items.

Emotion Instruction. After the individual idea generation phase had ended, participants received written instructions for the group task. These explained that the goal of the group task would be the group-wise creation of a list of as many ideas as possible, using the individual lists as input (generating new ideas during the group interaction was explicitly allowed, but too few groups made use of this possibility to analyze this variable). As an encouragement for critical evaluation of ideas, the instructions also mentioned that a bonus of €75 (€25 for each participant) would be

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awarded to the group that would generate most ideas that were not duplicate, useless, or dangerous.

To set the stage for the emotion manipulation, we emphasized the importance of critical evaluation for successful decision making. Then we introduced the emotion instructions as “instructions on how to contribute to group decision making”. The instructions themselves were based on emotion instructions that have been used in negotiation research (Kopelman, Rosette, & Thompson, 2006; Sinaceur & Tiedens, 2006). Three versions of the instructions were used, coaching the participant to express anger, to express happiness, or to approach the group task in a rational, non-emotional manner. Rather than not providing any instructions to the focal participants, we provided these participants with instructions to “be rational,” which have been found to be effective in reducing the amount of emotion shown (Kopelman et al., 2006). Moreover, by providing the focal participants with instructions of more or less equal length to the emotion instructions we made sure that they would not be suspicious about seeing the other two participants taking longer to read their instructions.

The basic format for each of these instructions was the same. First, the participant was told that experts agree that adopting the strategy described in the instruction (i.e., showing anger, happiness, or no emotion) would lead to optimal group performance, as it would help all group members to be open to critical ideas. Second, the instructions explained step-by-step how the strategy could be executed. For instance, in the emotion conditions, participants were instructed on non-verbal behaviors they could use to express their emotion. Importantly, these instructions also contained a number of example phrases that implicitly instructed participants to express emotions about other participants’ ideas, instead of about the person (e.g., “This kind of idea only makes me angry”). The focal participants read that they should control their emotions and think logically. Then, to ensure elaboration of the instructions, participants were asked to summarize their strategy in their own words, and write some sentences they could say during the group task to follow their strategy effectively.

Group-wise selection of ideas. Directly after studying their instructions, the participants’ seating arrangement was changed so that they faced each other. The experimenter then rolled a die to determine who would keep track of the group ideas, and re-iterated the goals of the group task, emphasizing that only the best ideas should end up on the list. All materials except the individual lists of ideas and the form on which the group ideas would be written, were removed. Then, participants were given 10 minutes to complete the group task.

Relative Influence. The focal participants’ influence in the group task was operationalized as the ratio of ideas contributed by this participant to the number of ideas contributed by the other two group members. Contribution was operationalized

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as the number of items that appeared both on an individual group member's list and on the final group list. In many cases, an idea (e.g., water) that was included on the group list appeared on more than one individual list. In these cases, we counted the item as having been contributed by each group member who had this idea on his/her personal list. Thus, for instance, if group members A and B both had "water" on their list, and "water" appeared on the group list as well, group members A and B both had a contribution of 1. For this reason, the sum of these counts in each group could total more than the number of ideas generated by the group. If the focal participant contributed as many ideas, on average, as the two other group members, this ratio would be 0.5, indicating that the focal participant had an equal amount of influence as the other two group members. Ratios lower than 0.5 reflect that the focal participant had relatively less influence than the other two group members (i.e., contributed fewer ideas), and ratios above 0.5 that the focal participant had relatively more influence.

Acceptance/rejection scale. After completing the group task, participants were seated separately again, and were given a questionnaire that contained the Acceptance/Rejection scale from Studies 4.1 and 4.2 (Cronbach's $\alpha = .73$).

Manipulation Checks. Upon completion of a second, unrelated group task, the effectiveness of the emotion manipulation was checked using both self-report and peer-report measures. The self-report measure was: "During the group tasks, to what extent did you show ...", followed by two items for anger ("anger" and "irritation", $r = .81$), and two items for happiness ("happiness" and "enthusiasm", $r = .79$). One more item was included to check for differences in rationality ("rationality").

For the peer-report measure, participants filled out two questionnaires, one for each of their two fellow group members. They were asked "To what extent was the participant on your [left / right] [angry / happy / rational]". We also asked "To what extent did the participant on your [left / right] show [anger / happiness / enthusiasm]". In order to get an estimate of the extent to which each participant had shown anger, happiness, and rationality, we first estimated the reliabilities of the respective scales. For both anger ($r = .88$ and $r = .93$) and happiness (Cronbach's $\alpha = .87$ and $\alpha = .87$), the relevant items could be combined to form a scale.

Then, the extent to which two peers agreed about another participant's emotional expressions was determined before aggregating to the participant level by averaging the two observations. There was significant agreement among peers about each participant's level of anger (ICC(1) = 0.37, $F(98, 99) = 2.16$, $p < .001$) and happiness (ICC(1) = 0.16, $F(98, 99) = 1.39$, $p = .050$), and ratings could therefore be aggregated to the participant level by averaging the peer ratings (e.g., participants A and B each rated the extent to which participant C had shown anger and happiness, and A and B agreed on both instances). For rationality, there was not enough agreement among

peers to justify aggregation ($ICC(1) = 0.10$, $F(98, 99) = 1.23$, $p = .15$). Thus, no peer-reported manipulation check of rationality was possible.

Results

The data were analyzed with the `lme4` R package, with a random intercept for group (unless otherwise stated), because our focal participants were nested in groups. Following the package author's recommendation,⁶ the significance of the results of the multilevel analyses was determined by Markov Chain Monte Carlo sampling from the posterior distribution of the parameters (see, e.g., Gilks, Richardson, & Spiegelhalter, 1996; 10000 samples), which results in a confidence interval for the regression coefficient that can be interpreted analogous to bootstrapping results. This yields a more reliable hypothesis test than calculating p -values from the t -statistic (which is explicitly discouraged), as there is little agreement about how to correctly estimate the relevant number of degrees of freedom.

Manipulation checks. First, the self-report manipulation checks were examined (for means and standard deviations of expressed emotion, see Table 4.2 at the end of this chapter). When self-reported anger (square-root transformed to correct for non-normality) was regressed on the type of instruction, the results showed that participants who had received the instruction to show anger during the group task reported to have shown more anger than participants who had been instructed to show happiness ($\beta = -1.66$, 95% CI: [-2.14; -1.24]) or to show no emotion ($\beta = -1.52$, 95% CI: [-1.96; -1.17]). Similarly, participants who had been instructed to show happiness reported to have shown more happiness than participants who had been instructed to show anger ($\beta = -0.79$, 95% CI: [-1.36; -0.22]) or no emotion ($\beta = -0.80$, 95% CI: [-1.25; -0.34]). Participants who had been instructed to show no emotion did not report to have been more rational than participants who had been instructed to show anger ($\beta = -0.26$, 95% CI: [-0.81; 0.24]) or happiness ($\beta = -0.47$, 95% CI: [-0.93; 0.03]; all M s and SD s for rationality: $5.08 < M < 5.75$, $0.81 < SD < 1.41$).

The peer-reported manipulation checks showed the same pattern for anger, but not for happiness (M s and SD s in Table 4.2 at the end of this chapter). Participants who had been instructed to show anger were reported to have shown more anger than participants who had been instructed to show happiness ($\beta = -1.41$, 95% CI: [-1.92; -0.91]) or no emotion ($\beta = -1.22$, 95% CI: [-1.64; -0.75]). Participants who had been instructed to show happiness were reported to have shown more happiness than participants who had been instructed to show anger ($\beta = -0.79$, 95% CI: [-1.34; -0.19]), but not compared to those who had been instructed to show no emotion ($\beta = -0.28$, 95% CI: [-0.73; 0.20]).

⁶ <https://stat.ethz.ch/pipermail/r-help/2006-May/094765.html>

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Together, the manipulation checks indicate that the manipulation was successful in the Majority Angry condition, but the results regarding the Majority Happy condition were less clear-cut. Although the self-report measures indicate that participants who had been instructed to show happiness indeed showed more happiness than all other participants, their peers did not perceive them to show significantly more happiness than the participants who had been instructed to express no emotions. Thus, according to the peer-reports, participants in the Non-Emotional condition faced the same situation as the focal participants in the Majority Happy condition. The absence of a difference may be explained by implicit social etiquette or display rules. In most social interactions, especially with people you do not know, the default behavior is to be nice and friendly, and to smile (e.g., Hess & Bourgeois, 2010; Hinsz & Tomhave, 1991). Although we told the control participants to show no emotion, they might have smiled in order to affiliate rather than to show happiness (see Fridlund, 1994).

Analytical strategy. To reflect the finding that, in terms of expressed emotions, the Majority Happy and Non-Emotional conditions were so similar, we decided to adapt our analytical strategy accordingly, and used specific contrasts to test our hypotheses. We first describe the effects in the Majority Angry (coded as 1) condition versus the other two conditions combined (each coded as -0.5), and then report the (orthogonal) contrast between the Majority Happy (-1) and Non-Emotional condition (1). Furthermore, we focus only on the focal participants in the remaining analyses.

Acceptance/rejection. To test the hypothesis that focal participants would feel more rejected in the Majority Angry condition than in the other conditions, and less rejected (i.e., more accepted) in the Majority Happy condition, felt rejection (square-root transformed to correct for non-normality) was regressed on the emotion conditions using the contrast coding described above. The results showed that the focal participants in the Majority Angry condition ($M = 3.12$, $SD = 1.06$) had felt more rejected than the focal participants in the Non-Emotional ($M = 2.08$, $SD = 0.62$) and Majority Happy conditions ($M = 1.96$, $SD = 0.71$), $\beta = 0.88$, 95% CI: [lower limit: 0.50]. Participants in the latter two conditions did not differ in terms of felt rejection, $\beta = 0.09$, 95% CI: [-0.17; 0.35].

Relative influence. To test whether focal participants in the Majority Angry condition had less influence in their groups than focal participants in the other conditions, we examined the ratio of contributed ideas discussed above. Because all between-group variance is accounted for by these ratios, the random intercept for group had no remaining variance (i.e., the variance equaled 0), and was therefore dropped from the analysis. Thus, a regular regression analysis was conducted.

The means indicate that, as expected, focal participants in the Majority Angry condition ($M = 0.44$, $SD = 0.24$) had less influence than their fellow group members,

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as indicated by a mean lower than 0.5, Furthermore, they had less influence in their group task than the focal participants in the Majority Happy ($M = 0.56$, $SD = 0.35$) and Non-Emotional ($M = 0.53$, $SD = 0.24$) conditions. This difference was marginally significant, $\beta = -0.36$, $t = -1.51$, $p = .068$, 1-tailed. The difference between the Majority Angry and Majority Happy conditions, on the other hand, was not significant, $\beta = -0.04$, $t = -0.26$, $p = .797$.

Mediation analysis. The next step was to test whether the focal participants' lower influence in the Majority Angry condition, relative to the Majority Happy and Non-Emotional conditions, could be explained by the extent to which these participants had felt rejected. For this purpose, the indirect effect of the manipulation on the influence ratio through felt rejection was estimated, and the significance of this indirect effect was checked using bootstrapping (see also Study 4.2, $R = 10000$ resamples). Our hypothesis, that the focal participants' lower relative influence in the Majority Angry condition, compared to the Majority Happy and Non-Emotional conditions, could be explained by felt rejection, was supported, $B = -0.24$, 95% BC_a CI: [upper limit: -0.02], $p = .04$, 1-tailed. The difference in the influence ratio between the Majority Happy and Non-Emotional conditions could not be explained by felt rejection ($B = -.02$, 95% BC_a CI: [-0.19; 0.05], $p = .59$). These findings indicate that the feelings of rejection that were experienced by the focal participants in the Majority Angry condition led to reduced influence in the group task, compared to focal participants in the other conditions.

Discussion

In this study, we replicated the basic findings from Studies 4.1 to 4.3 using an experimental group study involving real interaction. As in previous studies, group members who were faced with a majority that reacted with anger to their ideas felt more rejected than participants who were faced with a majority that did not react with anger. Feeling rejected, in turn, led participants who received angry reactions to conform more in a cooperative group task, compared to group members who were faced with a majority that showed happiness or no emotion.

It should be noted that the Majority Happy condition produced mixed results. Participants who had received an instruction to show happiness reported that they had shown more happiness than participants who had not been instructed to show an emotion, whereas peer-reports indicated that these participants showed the same amount of happiness. This suggests that, despite intending to follow the instructions, participants who received an instruction to express no emotions may have been unintentionally smiling as much as the participants who had been instructed to show happiness. Because it can be expected that three students of similar age, who do not know each other in advance, intend to affiliate rather than reject each other in such a situation (e.g., Hess & Bourgeois, 2010; Hinsz & Tomhave, 1991), this is not an unlikely pattern of results. Thus, it may be the case that participants who had been

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instructed to show no emotion failed to suppress their happiness, rather than that participants who had been instructed to show happiness failed to do so. This tendency to smile for affiliative reasons, despite having been instructed to express no emotions, points to the difficulty of having a 'neutral' or 'no emotion' reference condition in naturalistic settings. Nevertheless, we still see these findings as being in line with the idea that expressed happiness is interpreted as a signal of affiliation (see the Introduction), as the absence of a difference in felt acceptance between the Majority Non-Emotional and Majority Happy conditions paralleled the absence of a difference in the amount of happiness perceived by peers, rather than the difference in self-reported expressed happiness.

The findings regarding the relative influence of a group member who is facing an angry majority are consistent with a conformity interpretation. However, the design of the study, and especially our operationalization of influence, leaves some room for alternative explanations. For instance, an anonymous reviewer pointed to the possibility that focal participants in the Majority Angry condition may have also withdrawn from the group decision making process. Because our participants were not able to physically withdraw from the situation (as in Study 4.2), they may have simply abided by the majority's ideas instead of pushing their own ideas. Indeed, this passive strategy is different from the active matching of one's behavior to that of the group, which we defined as conformity, but the failure to behave as one normally would for fear of negative reactions may also be seen as a special case of conformity: conformity by omission (Cialdini & Trost, 1998). Thus, we believe that the type of social influence that the majority's expression of anger produces, is that a deviant group member allows the majority to influence their outcomes (i.e., group performance and their chance of winning a prize), either through active or passive conformity. We return to the different types of social influence elicited by expressed emotions, and the underlying processes in the General Discussion.

On a more general level, these data again show that emotions expressed by a majority can influence the behavior of another group member, and that feeling accepted or rejected is a likely explanation. Because we measured felt rejection/acceptance after the group interaction, this chain of causality could not be established beyond doubt. In Study 4.5, we used a different experimental paradigm to resolve this limitation.

Study 4.5

In the previous studies, we showed that a majority's anger leads a deviant individual to feel rejected, which in turn leads him or her to feel pressure to conform. In Study 4.5, our aim was to extend these findings by directly testing the causal model using a paradigm that afforded maximal experimental control and allowed a direct measurement of conformity. For this purpose, we set up an engaging computer-mediated cooperative interaction, in which we manipulated the emotion expressed by

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the majority (anger vs. happiness). Furthermore, we tested the moderating influence of yet another social-contextual factor that determines the extent to which conformity is meaningful behavior if one feels rejected due to expressions of anger by the majority: the prototypicality of the deviant individual.

Prototypicality reflects the extent to which a member is seen as possessing features that are distinct characteristics of group memberships (Hogg, 2005). Prototypical group members can be said to occupy central positions in the group, while their counterparts, peripheral members, are closer to the group boundaries. Prototypical members are safely bound within the group, whereas peripheral members are more concerned with the location of group boundaries (Pickett & Brewer, 2005) and with regulating their behavior to ascertain group membership (e.g., Jetten et al., 2006; Van Kleef, Steinel, Van Knippenberg, Hogg, & Svensson, 2007). Because conformity is a way of showing that one is a good group member (cf. Hollander, 1960; Klein et al., 2007), we may expect that only peripheral members will conform more after receiving an angry reaction from a majority (given that no alternative groups are available), as they are especially concerned with gaining acceptance in the group. Prototypical members, on the other hand, are less likely to be affected by the opinion of their peers because they are stable group members and therefore less concerned with gaining acceptance (Van Kleef et al., 2007). Thus, we predict that prototypical members' behavior will be less affected by the majority's emotions than the behavior of peripheral members.

Method

The experiment, which was inspired by a study by Griskevicius et al. (2006), consisted of two parts. The first session took place in the laboratory. During this session, participants were placed in a group, evaluated several paintings, received emotional feedback from a majority about one of their evaluations, and finally rated this specific painting again. Then, three to four weeks later, participants were contacted for a follow-up posttest, in which the same painting was rated again. Thus, two measures of conformity could be calculated, one at the second rating during the session (T_2 conformity) and one a few weeks later (T_3 conformity).

Participants and design. Ninety-seven participants were recruited for a study about aesthetic preferences. In exchange for their participation, they received either course credit or €3.50. Four participants spontaneously expressed suspicion about the reality of the experimental situation and an additional six participants indicated that they knew at least one of the persons in the photos that represented their fellow group members (see "Introduction to the group" below), which posed a problem for the credibility of the emotion manipulation. After dropping these participants, the final sample consisted of 22 men and 64 women ($M_{\text{age}} = 21.42$, range 18 – 35 years), who were randomly assigned to the conditions of a 2 (prototypicality: peripheral or prototypical) x 2 (majority emotion: angry or happy) between-subjects design.

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Materials and procedure. Upon arrival in the laboratory, participants learned that the aim of the experiment was to investigate the relation between personality and art preferences, and the way people communicate about art. The experiment would consist of two parts. In the first part, they would complete a personality test and then gave their opinion about a number of paintings individually. In the second part, they would have a group discussion about art with three other participants, who were taking part in the same experiment at the same time in a different building on the university campus, as we wanted to avoid that participants in the same group would know each other personally. In reality there were no other participants taking part, nor would there be a group discussion, but the cover story was needed to make the situation and the manipulations appear genuine. After obtaining informed consent, participants were seated individually behind a computer that was used for presenting all instructions and recording all answers.

Individual ratings. After entering their demographic information and taking a bogus personality test, which was used to set the stage for the manipulation of prototypicality, the participant proceeded to evaluate 41 paintings using a slider (0 = *ugly* to 100 = *beautiful*). These paintings were collected from a number of freely accessible galleries and museums (e.g., the museum of bad art, <http://museumofbadart.org/>) on the Internet. As art can differ on many dimensions, and preferences on some of these dimensions are known to be influenced by psychological variables (e.g., need for cognitive closure increases preferences for figurative art, Wiersema, Van der Schalk, & Van Kleef, 2012), we attempted to keep our selection of paintings as constant as possible. Thus, we used only non-figurative art that was photographed in full-color. Pictures were cropped and/or resized to identical on-screen size.

Apart from lending credibility to the cover story that we were interested in the relation between personality and aesthetic preferences, rating such a large number of paintings had another aim: The group norm could be kept constant between participants. For this purpose, the painting that was rated closest to the 40th scale point was selected. We will refer to this painting as the ‘focal painting’. Later in the experiment, participants learned that their fellow group members had consistently rated this focal painting around the 90th scale point. Thus, each participant had a different focal painting, but all participants expressed a mild dislike of their focal painting in the initial round and later learned that the group consensus was to strongly like this painting. By using the 40th scale point as the critical value, we ensured that participants could both shift toward, or away from the group norm on a second rating of the focal painting. Thus, on the second rating (to be discussed below), participants

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could both conform, or express their deviance from the group if they wanted to do so.⁷

Introduction to the group. After completing the measure of individual aesthetic preferences, the participant was introduced to the other group members. This procedure, adapted from Homan, Greer, Jehn, and Koning (2010), served to make the situation appear even more genuine and to induce a sense of ‘groupiness’. First, participants were instructed to make a photo of themselves using the webcam, which would be sent to the other group members via the network. They could make as many photos as they liked, until they were happy with the result. After sending their photo to the other group members, participants saw photos of the other group members appearing one by one on the screen. To minimize chances that the actual participants knew the people in the photos, which could arouse suspicion, we used photos of first- and second year students from other disciplines who were photographed in the same cubicles as where the study was ran. The sex of the people in the pictures was arranged so that the four-person groups (including the participant) always contained two males and two females.

Prototypicality manipulation. After having seen the photos of the other group members, participants learned that we wanted to give them some more information about their fellow group members, which was used to manipulate prototypicality. In this procedure, which was adapted from previous research (see Steinel, Van Kleef, Van Knippenberg, Hogg, Homan, & Moffit, 2010; Van Kleef et al., 2007), participants first read that their scores in the personality test had been compared with those of the other group members. Subsequently, in the peripheral condition, they read: “There is *little* overlap between your personality and your fellow group members. This means that you have *little* in common with the other participant and that you’re *not* typical for your group.” (emphasis in original). In the prototypical condition, the italicized words were changed to “much” (2x) and “very,” respectively.

Majority emotion manipulation. After learning how their personality compared to that of the other group members, participants learned that aesthetic preferences are, in large part, determined by the emotions that people experience while viewing art, and

⁷ This is a slightly simplified description of the actual procedure, in which both the 40th and 60th scale point were used as critical values. After all paintings had been rated, difference scores to these values were calculated, and the painting with the smallest difference score to either of these values was used as the focal painting. In case of ties (e.g., a painting rated at 39 and one rated at 61), one was selected randomly from the ties. For participants who rated the focal painting at (or around) 60, the group norm was around the 10th scale point. Including the group norm (higher vs. lower than initial rating) as a factor in the analysis did not change any of the results, and this factor is therefore not discussed further. For simplicity, all effects are discussed as if the original painting had been rated at the 40th scale point (thus reversing the ratings for participants that initially rated their focal painting at (or around) 60.

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that personality is an important determinant of the emotions that people experience. To investigate whether emotions could indeed account for the link between personality and aesthetic preferences, a group communication task would be completed in which every participant could indicate the emotion that s/he experienced while viewing the painting that received the most different ratings from the group members. On the following screen, the focal painting was displayed, together with the ratings of the other group members. These were presented anonymously and were all around the 90th scale point, and thus constituted a descriptive norm. Since the painting that received most different ratings had been selected, the participant could deduce from this information that (s)he had been the one with the different rating, and that the other group members could see the participant's deviant rating on their screen.

After having been exposed to the group norm, the emotion communication round was introduced, which contained the manipulation of majority emotion. In this task, all group members could select an emoticon (e.g., a smiley) from a sample of 15 emoticons to represent the emotion they experienced while viewing the focal painting. If they wanted to, they could also write a comment. This emoticon and comment would be sent to the other group members. First, participants learned they had been randomly selected to be the last group member to indicate their emotions. Then, depending on the condition, the group member to go first selected either an angry emoticon or a happy emoticon (i.e., a smiley) and wrote "I don't really feel a certain emotion about this painting, but I'm happy [angry] that someone rated the painting so different from the rest of the group and we're going to have to talk about that. It'll be an interesting discussion!" The second group member selected the same emoticon as the first without sending a comment, and the third group member selected the same emoticon as the other two and commented "me too!". Thus, the participant saw that three group members had the same emotion (either happiness or anger), which one of them attributed to the behavior of the participant, while the others concurred. Finally, the participant could pick an emoticon and write a comment to send to the other group members. Analysis of the emoticons chosen by the participants and their comments did not yield any insights and will not be discussed further.

T2 conformity. After indicating and commenting on their own emotions, participants proceeded to rate the same focal painting a second time. It was explained that these ratings would be made public at the start of the group discussion, which would follow the computerized session. Thus, participants felt accountable for their behavior, and they were offered an opportunity to conceal their previous non-conformity by conforming in this round. Then, participants rated the same focal picture again using a slider (0 = *ugly* to 100 = *beautiful*). Because of severe non-normality of the difference scores between the first and second rating, the change in judgment was coded as a binary variable. Movement toward the group norm was coded as 'Conformity' ($N = 26$), and movement away from the group norm was

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coded as 'Deviance' ($N = 57$). No movement ($N = 3$) was coded as missing, as this behavior could not be interpreted in terms of conformity/deviance.

Acceptance/Rejection scale. After completing the conformity measure, participants were informed that a few more measures would be completed before the group discussion would begin. Perceived rejection was measured using a 6-item scale composed of the four items used in Studies 4.1, 4.2 and 4.4 and two new items ("I feel pressure to yield to the group" and "The group expects me to stay in line", Cronbach's $\alpha = .81$).

Manipulation checks. The manipulation of majority emotion was checked by asking participants to indicate on 7-point scales (1 = *none at all* to 7 = *very much*) how much anger and happiness had been communicated by their fellow group members during the communication round. To avoid drawing too much attention to these emotions, participants were asked the same question for six more emotions that had also been represented by emoticons earlier during the emotion communication round (disgust, surprise, disappointment, contempt, and sadness). The manipulation of prototypicality was checked with four items (e.g., "I have little in common with my fellow group members." (reverse-scored), "My fellow group members' personality is comparable to mine."), which were answered on 7-point scales (Cronbach's $\alpha = .91$).

T3 conformity. Upon completing all measures, participants were instructed to notify the experimenter. When the experimenter entered, the participant was told that the group discussion had unfortunately been cancelled due to practical reasons. The experimenter then asked whether the participant would be willing to be contacted for some further measurements, in case his/her results showed inconsistencies or unexplainable findings. Except for one, all participants agreed and left their telephone number.

Three weeks after participants had taken part in the experiment, they were contacted via e-mail to invite them for a posttest consisting of some more questions about art. It was explained that after analyzing the data, some questions had remained unanswered, which we wanted to resolve using the posttest. The task would consist of rating some more paintings and answering some miscellaneous questions about art. Participants were contacted a maximum of three times, once via e-mail, and then twice by telephone. The posttest was terminated four weeks after the end of the initial lab experiment, at which point 61 participants had taken the posttest. Participation in the posttest was not predicted by (any combination of) the manipulations.

The first part of the posttest only contained one measure of interest, which was another evaluation of the focal painting. Participants were told that we wanted them to rate some more paintings, some of which could be familiar, some of which could be new. Then, we first presented a familiar painting (a random painting selected from the 40 non-focal paintings evaluated in the individual rating round), then two new paintings, followed by the focal painting, and finally one more familiar painting. To

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reduce the possibility that a participant would attempt to recall their earlier rating, a different rating scale was used. Instead of the slider that was used at T₁ and T₂, paintings were rated on a 9-point scale (1 = *ugly* to 9 = *beautiful*). After completing some more questions about art, participants were thanked and given a link to a full debriefing.

Results

Manipulation checks. Participants reported that their fellow group members had shown more anger when they had received angry emoticons from the majority ($M = 5.55$, $SD = 1.60$) than when they had received happy emoticons ($M = 1.84$, $SD = 1.06$), $\beta = 1.62$, $t(84) = 12.76$, $R^2 = .66$, $p < .001$. Similarly, participants indicated that their fellow group members had shown more happiness after seeing the smiling emoticons ($M = 4.98$, $SD = 1.25$) than after seeing angry emoticons ($M = 2.60$, $SD = 1.42$), $\beta = 1.33$, $t(84) = 8.29$, $R^2 = .45$, $p < .001$. Participants also indicated that they were more prototypical of their group when they had seen that their personality was similar to their fellow group members' personality ($M = 4.07$, $SD = 1.33$) than when they had seen that it was not ($M = 3.18$, $SD = 0.94$), $\beta = 0.72$, $t(84) = 3.58$, $R^2 = .13$, $p = .001$. There were no cross-effects of one manipulation on the other check, and no interactions. Hence, the manipulations were successful.

Acceptance/Rejection. As expected, participants felt more rejected when the majority had expressed anger about the participant's rating ($M = 4.16$, $SD = 0.82$) than when they had expressed happiness ($M = 2.99$, $SD = 0.83$), $\beta = 1.16$, $t(84) = 6.60$, $R^2 = .34$, $p < .001$ (1-tailed). When the prototypicality manipulation was included in the model, neither a main effect of prototypicality ($\beta = -0.02$, $t(84) = -.14$, $p = .89$), nor an interaction of the two manipulations ($\beta = .27$, $t(84) = 1.52$, $p = .13$) was found, indicating that the extent to which people felt accepted or rejected was not dependent on the prototypicality manipulation.

T₂ conformity. As can be seen from Figure 4.4, peripheral members conformed more after an angry reaction than after a happy reaction, but this was not the case for prototypical members. Indeed, probit regression⁸ yielded a significant Emotion x Prototypicality interaction on T₂ conformity, $B = -1.02$, Wald's $z = -1.70$, $p = .04$ (1-tailed). Simple slopes indicated that within the peripheral condition, conformity was higher after anger had been expressed by the majority (12 out of 21, 57.14%) than after happiness had been expressed (4 out of 21, 19.05%), $B = 1.06$, Wald's $z = 2.52$, $p = .01$ (1-tailed), whereas this was not the case in the prototypical condition (Anger: 5 out of 20, 25.00%; Happiness: 5 out of 21, 23.81%), $B = 0.04$, Wald's $z = 0.09$, $p = .93$.

⁸ Using the logit link function for these analyses instead, the reported p -values are virtually identical (deviations in the .005-.01 range in both directions). The only change to the interpretation is that the interaction becomes marginally significant ($p = .05$).

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To investigate whether peripheral members conformed after an angry reaction because they felt rejected, a moderated mediation analysis was conducted (Preacher et al., 2007; see also Study 4.3). The majority emotion manipulation was specified as the independent variable, conformity as the dependent variable, felt acceptance/rejection as the mediator, and prototypicality was specified as a moderator of the path from felt acceptance/rejection to conformity (see Figure 4.1). The strength of the indirect effect was estimated separately for prototypical and peripheral members by calculating BC_a intervals after bootstrapping ($R = 10000$ resamples). As in Study 4.3, bootstrap resamples yielding empty cells were discarded, leaving 9704 resamples to estimate the strength of the indirect effect. The results showed that for peripheral group members, 0 was not enclosed in the 95% confidence interval of the indirect effect of the majority emotion on conformity, $B = 0.54$, 95% BC_a CI: [lower limit: 0.05], $p = .02$ (1-tailed), which is consistent with the idea that peripheral members conformed more after an angry reaction than after an enthusiastic reaction because they felt more rejected. For prototypical group members, 0 was enclosed in the confidence interval, $B = -0.24$, 95% BC_a CI: [-0.92, 0.45], $p = .46$, and any relation between majority emotions and conformity could therefore not be explained by felt acceptance/rejection.

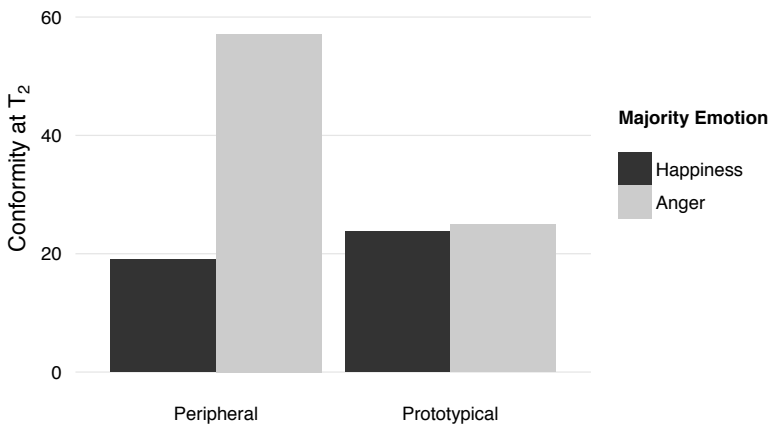


Figure 4.4: Proportion of participants conforming in each condition (Study 4.5).

T₃ conformity. Because the posttest employed a 9-point scale instead of the slider that was used at T₁ and T₂, it was not possible to calculate difference scores as the measure of conformity at T₃. As nearly all participants initially rated their focal

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painting within three scale points of the critical value (on the 100-point slider),⁹ we were able to use the raw scores for these participants. The absolute T_3 ratings ($N = 60$) were subjected to a square-root transformation to correct for non-normality. Reported means and standard deviations are untransformed values.

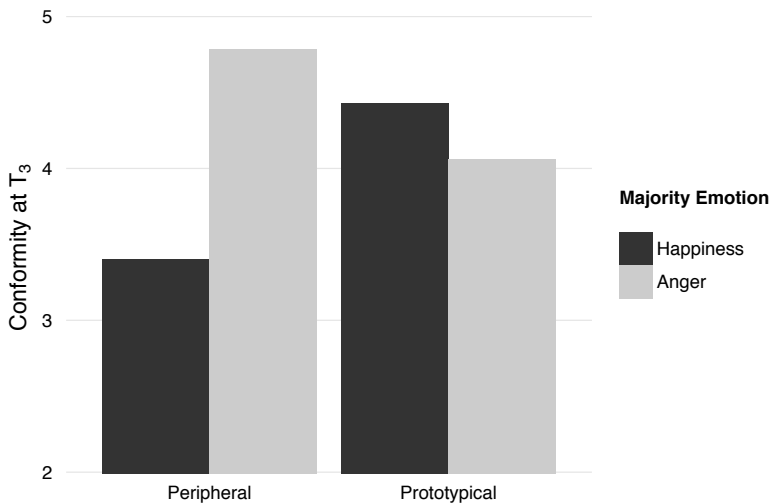


Figure 4.5: Conformity in the posttest, measured as the evaluation of the focal painting three weeks after the manipulation (Study 4.5).

Analysis of the ratings of the focal painting at T_3 showed that even after three weeks, participants' evaluation of the focal painting was influenced by the emotional reaction of the group. As can be seen from Figure 4.5, the emotions of the majority had more effect on peripheral members' conformity than on prototypical members' conformity, $\beta = -0.98$, $t(56) = -1.92$, $p = .03$ (1-tailed). Simple effects confirmed that, as predicted, peripheral members conformed more after an angry reaction ($M = 4.79$, $SD = 1.93$) than after a happy reaction ($M = 3.40$, $SD = 1.88$) to their original rating, $\beta = 0.77$, $t(56) = 2.11$, $p = .02$ (1-tailed). Also as predicted, prototypical members' conformity did not differ as a function of the group's emotion ($M_{\text{anger}} = 4.06$, $SD = 1.75$, $M_{\text{happiness}} = 4.43$, $SD = 1.87$), $\beta = -0.21$, $t(56) = -0.58$, $p = .28$ (1-tailed).

⁹ One participant had initially rated the focal painting at 9 scale points from the critical value. We chose to discard this participant, as we were not convinced that we could compare this participant's T_3 rating to the other participants' ratings, nor that we could simply adjust this person's T_3 rating to make it comparable.

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The fact that conformity was found in peripheral members even three weeks after the emotion manipulation raised the question if these effects could also be explained by the extent to which the participant had felt accepted or rejected during the experiment. This possibility was examined using another moderated mediation analysis, which followed the same logic as described under T_2 conformity. The strength of the indirect effect was estimated separately for prototypical and peripheral members by calculating BC_a intervals after bootstrapping 10000 resamples). The results showed that in the peripheral condition, 0 fell outside the 95% confidence interval of the indirect effect of the majority emotion on conformity, $B = 0.34$, 95% BC_a CI: [lower limit: 0.15], $p = .002$ (1-tailed), indicating that peripheral members who had received an angry reaction from the majority three weeks earlier conformed more than those who had received a happy reaction, because these participants had felt more rejected. Also as before, and in line with the predictions, no mediation was found for prototypical members, as shown by the fact that 0 was enclosed in the confidence interval, $B = -0.03$, 95% BC_a CI: [-0.32, 0.22], $p = .79$. Thus, peripheral members conformed after the majority reacted with anger to their evaluation because they felt rejected, whereas prototypical members' behavior was not affected by the majority's emotions.

Discussion

We replicated the finding that the majority's anger leads a deviant individual to feel more rejected, whereas the majority's happiness leads to feeling less rejected (i.e., more accepted). In line with our predictions, peripheral members conformed more after receiving an angry reaction than after a happy reaction, which is congruent with the idea that conformity is a means of showing their group credentials (Hollander, 1960; Klein et al., 2007). For prototypical members, we predicted that there would be little to gain by conforming, and the results showed that these members indeed did not conform in response to anger. These effects were not only found immediately after the influence situation, but were even obtained three weeks later. Importantly, for both the immediate and delayed measurements, peripheral members' conformity to the groups' evaluation of the painting could be explained by the extent to which they had felt rejected. Together, these findings show that a majority may induce conformity in a deviant, peripheral member by reacting with anger, whereas a happy reaction does not lead to behavioral change.

A particularly striking finding in this study is that changes in opinion can be found even a few weeks after seeing three angry emoticons and an angry statement. One feature of this experiment that might have been important in producing this effect is that the participants had never seen the paintings before. Earlier research has shown that it is more difficult to influence an already existing attitude (see, e.g., Crano & Prislin, 2006), so using an unfamiliar attitude object may have enhanced the effects of the emotion manipulation. However, Asch (1956) showed that conformity might

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even be observed when a majority is obviously wrong, which suggests that conformity caused by the majority's emotional reactions might even be found when someone is strongly convinced about the validity of his/her attitudes. Future research could explore whether this is indeed the case.

General Discussion

Taking a social-functional perspective on emotion (e.g., Fischer & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Parkinson, 1996; Van Kleef, 2009), we examined how two emotions—happiness and anger—shape conformity processes in groups. We hypothesized that these emotions, if expressed by a majority of a group to which one belongs, are interpreted as signals of one's inclusionary status and that these emotion signals can influence the behavior of an individual group member. Specifically, we predicted that if a majority expresses anger in response to an act of deviance by one individual, the rejection experienced by this individual may lead to conformity if the individual is motivated to gain (re)acceptance in the group and if conformity is a means to this end. Happiness, on the other hand, was theorized to be interpreted as indicative of acceptance, thereby signaling no need for behavioral change, which would lead an individual to persist in deviance.

In line with our theorizing, Studies 4.1 to 4.5 consistently showed that if a majority expresses anger towards a deviant group member, this individual feels more rejected, whereas if the majority expresses happiness, the deviant individual feels less rejected (i.e., more accepted). Study 4.1 furthermore suggests that it is not a general negative emotional reaction, but specifically anger that produces the feeling of rejection, because anger leads to stronger feelings of rejection than a neutral reaction, whereas disappointment does not. In the remaining studies, we showed that the deviant's behavior in response to these emotion expressions can be explained by the extent to which he or she is motivated to seek re-acceptance by conforming. In Study 4.2, we have shown that the majority's anger may push the deviant individual out of the group if belonging in an attractive alternative group is possible. If no alternative groups are available, conformity is more likely. Study 4.3 then showed that in a cooperative setting, a deviant individual experiences a pressure to conform if the majority expresses anger. In cooperative settings, deviance can frustrate effective coordination, whereas it does not in competitive settings. Thus, in cooperative settings (but not in competitive settings), one can show commitment to the shared goal by conforming, thereby increasing chances of being re-accepted. In Study 4.4, we replicated these results in a cooperative group interaction study, which showed that participants who were faced with an angry majority felt more rejected, and therefore had relatively less influence on their group outcomes than participants who were facing a happy or neutral majority. Finally, in Study 4.5 we examined the process in yet more detail and found that only peripheral and not prototypical members conformed more after an angry response. This finding is consistent with our

motivational perspective, because peripheral members could show good group membership by conforming, whereas prototypical members are safely bound within the group, and therefore have less to gain by conforming.

Theoretical Implications

By highlighting these effects of anger and happiness in a group context, we contribute to the growing literature on the social functions of emotions (e.g., Fischer & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Parkinson, 1996; Van Kleef, 2009), and specifically the functions that emotions have in groups. Although the angry reactions that may arise in groups in response to deviance have been described previously (Marques et al., 1998; Nemeth & Wachtler, 1974), the impact of this anger on the deviant individual has never been investigated. By analyzing the effects of emotions in this context, we have shown that a majority's anger and happiness lead the deviant individual to feel rejected and accepted, respectively, thereby influencing the behavior of the deviant. The motivational effects of receiving an angry reaction can be so profound that they persist over time, resulting in conformity to the group norm even several weeks later (Study 4.5).

In their seminal article detailing the social functions of emotions at four levels of analysis, Keltner and Haidt (1999) propose three social functions of emotions at the group level of analysis. First, collectively shared emotions help individuals define group boundaries and identify group members. Second, emotions may help individuals define and negotiate group-related roles and statuses. Third, collective emotional behavior may help groups resolve potential problems. Our findings speak to the first two functions by showing that emotional expressions have consequences for a target group member's perception of his or her inclusionary status in the group, which has implications for that person's status within the group and for group boundaries. Additionally, our results support the third function by showing that emotions are functional in regulating individual members' behavior in order to achieve collective goals. Importantly, we have demonstrated that the effectiveness of anger in bringing about behavioral change in deviant group members is limited by a number of situational factors, such as the perceived competitiveness of the situation (Study 4.3), and the extent to which a deviant group member is prototypical (Study 4.5).

We believe that considering the functionality of group members' emotions in bringing about behavioral change in fellow group members may shed light on many intragroup processes. Noteworthy in this respect is that Studies 4.3, 4.4, and 4.5 are, to our knowledge, the first studies that show that feeling rejected by a group can lead to changes in behavior that are aimed at regaining acceptance in the same group. Although previous research has shown that being socially excluded from a group may lead to conformity in a different group (e.g., Williams et al., 2000), it is usually found that exclusion provokes anger and leads people to derogate or aggress against the

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group that has excluded them (e.g., Bourgeois & Leary, 2001; Buckley, Winkel, & Leary, 2004). We offer two explanations for this difference. First, most paradigms that are used for studying social exclusion offer few possibilities for the excluded person to seek re-acceptance, as they are aimed at showing the effects of exclusion on one's functioning. For instance, in the cyberball paradigm (e.g., Williams et al., 2000), participants have no behavioral options while being ostracized. Thus, even if they would want to, participants have no means to seek re-acceptance. Second, the studies in which participants could act toward the group they were excluded from were structured in a way that participants were not accountable for their actions, thus inflating the likelihood of aggression (e.g., Prentice-Dunn & Rogers, 1982). Also, consistent with our motivational perspective, this may have simultaneously reduced the likelihood of prosocial behavior, as there is nothing to gain by conforming if one's actions cannot be identified. Thus, we think that a crucial factor in inducing conformity to the group that one is excluded from is whether there is a possibility to show that one is a valuable group member (Hollander, 1960; Klein et al., 2007).

Another reason why it is noteworthy that we found conformity to the same group after an angry reaction from the majority is that emotions expressed by one person tend to trigger similar emotions in other people (e.g., Hatfield et al., 1994). Thus, the angry reaction from the majority might have produced anger in the deviant individual (see also Molden, Lucas, Gardner, Dean, & Knowles, 2009). The fact that we observed conformity in a situation that was likely to elicit anger and the accompanying aggressive tendencies contrasts with Smart Richman and Leary (2009)'s argument that feeling anger in response to social exclusion is always accompanied by antisocial responses. If this were the case, our participants should have conformed less after an angry reaction, which is the opposite of what we found in cooperative settings (Study 4.3 and 4.4) and for peripheral members (Study 4.5). In order to tease apart the antisocial effects of feeling anger, and the prosocial effects of felt rejection, future research could fruitfully pit prosocial and antisocial responses directly against each other. In any case, these effects suggest that in the situations studied here, participants' interpretation of the majority's anger was more influential in shaping their behavior than was their reciprocal anger (Van Kleef, 2009; see also Chow, Tiedens, & Govan, 2008). This potency of the interpretation of an emotional expression in shaping behavior points to the importance of considering inferential processes in describing the interpersonal effects of emotions, a conclusion that is in keeping with recent theoretical developments (e.g., Emotions as Social Information [EASI] Theory; see Van Kleef, 2009; Van Kleef et al., 2010, 2011).

Our findings also contribute to the understanding of the interpersonal effects of emotions. According to Van Kleef and colleagues (2010), emotions may be categorized into families (see also Roseman, Wiest, & Swartz, 1994) on the basis of their interpersonal effects. Specifically, Van Kleef and colleagues (2010) draw a distinction among aggressive emotions (such as anger and irritation), affiliative

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emotions (such as happiness and contentment), supplication emotions (such as disappointment and sadness), and appeasement emotions (such as guilt and interpersonal regret). Congruent with this distinction, the effects of happiness and anger were clearly distinguishable from each other across all studies, and both differed from the effect of disappointment (Study 4.1). Also, we indeed found strong correlations between the different affiliative emotions that we measured, and the same was true for the aggression emotions irritation and anger (Studies 4.3 and 4.4). Furthermore, enthusiasm (Studies 4.1 and 4.2) and happiness (Studies 4.4 and 4.5) produced highly similar effects on felt acceptance. Thus, these findings support the idea that emotions may be grouped in families based on their interpersonal effects, and that different emotions that are part of the same family produce comparable interpersonal effects.

In the present studies, we did not include emotions from still another emotion family, namely social exclusion, such as contempt, disgust, or scorn (see Fischer & Roseman, 2007; Roseman, Wiest, & Swartz, 1994). A crucial difference between anger and these social exclusion emotions may be that anger does not communicate that the other person is inferior, and thus not even worthy of attention, as scorn and contempt do (cf. Fischer & Roseman, 2007; Fiske, 2010), but rather the opposite. Even though emotions in the aggression family, such as anger, may be interpreted as signals of rejection, anger may specifically hold the promise of re-acceptance if the other changes his/her behavior. Social exclusion emotions on the other hand do not hold this promise and it could be an interesting venue for future research to examine the interpersonal effects of social exclusion emotions on group processes.

On the surface, our findings bear some resemblance to prior findings regarding the interpersonal effects of happiness and anger on the dyadic level. For instance, individuals concede more to a negotiation partner who expresses anger about an offer in a mixed-motive negotiation (e.g., Sinaceur & Tiedens, 2006; Van Kleef, De Dreu, & Manstead, 2004a; 2004b). Although this similarity may suggest that to some extent, the interpersonal effects of a given emotion family on one level may have similar effects on different levels of analysis, differences between the situations and findings abound. For instance, it should be noted that this increased compliance after an angry reaction was found in mixed-motive situations with clear competitive incentives, whereas our results suggests that the majority's anger elicits conformity mainly in cooperative settings (Study 4.3). Furthermore, generalizing from one level to another is complicated by moderators that are relevant only on one level of analysis, such as prototypicality (Study 4.5). Thus, similarities notwithstanding, we believe one should be careful of blindly generalizing effects from one level to another, and any generalization should be empirically tested before being accepted as valid.

Throughout this article, we consistently found that the majority's happiness leads a deviant individual to feel accepted, yet we found no behavioral effects of happiness when compared to a neutral reference condition in Study 4.4. Indeed, as we stated in

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the introduction, we anticipated little behavioral change on the part of the deviant individual after a happy reaction. Does this mean that expressions of happiness within groups can never bring about behavioral change? We do not think so. As we were interested in how deviants are affected by the majority's emotional expressions, the situation may have restricted the behavioral options for the deviant. That is, there is little room to move away from the group norm when one is already breaking the group norm. Thus, we believe that in a different situation, where opinions deviating from the group's consensus are likely to be suppressed (e.g., decision-making under time pressure), happiness may actually, through its reducing effects on conformity pressure (Study 4.3), stimulate deviance. Furthermore, the interpersonal effects of happiness within groups are possibly more delayed than the effects of anger. For instance, through its acceptance signaling function, happy reactions may over time help to build one's self-esteem (Leary, Tambor, Terdal, & Downs, 1995), building the confidence to speak up more often (Baumeister, Campbell, Krueger, & Vohs, 2003). Given that people want to maintain a sense of uniqueness while feeling part of the group (Brewer, 1991; Hornsey & Jetten, 2004), expressions of happiness may guide people in finding acceptable ways of expressing their uniqueness (i.e., deviance), which helps them find such an optimally distinctive position in groups (Brewer, 1991), for instance by taking on different roles and responsibilities in groups (Hornsey & Jetten, 2004).

Strengths, Limitations, and Directions for Future Research

A strength of the current research is that the effects were found across four different paradigms. Studies 4.1 and 4.2 afforded much experimental control through the use of vignettes, but may be criticized for tapping into naive theories about emotion (Parkinson & Manstead, 1993), instead of actual reactions to emotional expressions. By using a critical incidents approach in Study 4.3, we tapped into actual experiences of being deviant in a group, thereby offering great ecological validity and avoiding shortcomings of the vignette approach in Studies 4.1 and 4.2. Study 4.4 then replicated these findings in a cooperative group study involving a behavioral measure of conformity. Finally, by bringing participants in a situation in which the majority's emotions were strictly contingent on their behavior in Study 4.5, we were able to establish causality in the mediating chain involving feelings of acceptance/rejection. Furthermore, by doing a follow-up posttest, we could determine that the effects of feeling rejected after an angry reaction are so profound that they lasted for weeks. Thus, across situations and paradigms, all results were in line with our hypotheses and strongly supported our motivational model (Figure 4.1), showing the robustness of the studied phenomena.

One important issue that might need additional inquiry is to further tease apart the different social influence processes that underlie the behavioral conformity effects we observed. As our participants adjusted their behavior because they felt rejected, it is

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tempting to conclude that our participants were driven by a desire to affiliate (Cialdini & Goldstein, 2004), and therefore that we studied a type of normative influence (Deutsch & Gerard, 1955). Yet, we do not think that other types of social influence should be ruled out. For instance, the fact that we observed conformity even three weeks after the influence situation (Study 4.5) indicates that informational influences may have been at work as well. Furthermore, the finding that receiving angry reactions from a majority reduced a group member's influence in Study 4.4 may also be explained by withdrawal. This may be seen as a case of conformity by omission (Cialdini & Trost, 1998), where one fails to behave in a certain way (i.e., contribute ideas) because others would not approve of this behavior. These various types and reasons for conformity may well reflect the two opposing consequences of feeling rejected that we studied in Study 4.2: the desire to leave the group, and the desire to remain in the group. It is likely that the situation is crucial in determining whether one motive prevails over the others, and which strategy individuals choose to balance these competing behavioral tendencies. For instance, whether or not a participant is forced to give a response (i.e., perform one identity or another; Klein et al., 2007) may be crucial in determining how different motives translate into behavior. Further research may shed light on this issue.

An alternative explanation for our findings could be that the observed conformity was not produced by feeling rejected, but by feeling guilty or shameful of the norm transgression (Baumeister, Stilwell, & Heatherton, 1994; Eisenberg, 2000; Nugier, Niedenthal, Brauer, & Chekroun, 2007). Although we did not discuss this in the respective sections, we did in fact include measures of guilt and shame in all studies. The results, however, showed that our manipulations did not affect self-reported guilt and shame, nor did we find any indirect effects of anger on the dependent variable through self-reported guilt¹⁰ and shame¹¹. Thus, a 'moral' mechanism through induced guilt and shame appears to be unable to account for conformity induced with anger.

Of course, a situation in which one member deviates from the group's consensus is but one of the many permutations of group settings that could be analyzed. Thus, it is an important question to what extent our findings are restricted to this specific situation. For instance, it may not require a *majority* that expresses anger in order to

¹⁰ No main effects of the emotion manipulation on guilt was found in studies 4.1, 4.2, 4.4, and 4.5, and moderated mediation analyses revealed no mediating role of guilt between the effect of majority emotions and conformity pressure in Study 4.3: $B_{\text{cooperative}} = -0.002$, $p = .54$; $B_{\text{competitive}} = 0.001$, $p = .96$ (p value is based on bootstrapping with 10000 resamples).

¹¹ No main effects of the emotion manipulation on shame was found in studies 4.1, 4.2, and 4.5, and moderated mediation analyses revealed no mediating role of shame between the effects of majority emotions and conformity pressure in Study 4.3: $B_{\text{cooperative}} = 0.06$, $p = .18$; $B_{\text{competitive}} = -0.01$, $p = .78$ (p values are based on bootstrapping with 10000 resamples).

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feel rejected as a deviant. Similarly, it is possible that people may feel rejected if other people express anger toward them even though they are not yet deviant. Thus, whether or not people feel rejected or accepted if others express anger or happiness about their behavior, and whether this results in social influence may depend on a complex array of factors. Considering the potential complexity of the situation, it is no surprise that research so far has focused mainly on relatively well-defined dyadic situations (e.g., negotiations; Van Kleef, De Dreu, & Manstead, 2004a, 2004b), and/or has focused mainly on group-level processes such as emotional contagion (e.g., Barsade, 2002; Totterdell, 2000). We think that it is important to further our understanding of the more intricate emotional processes that impinge on individuals within groups, as most of human life takes place in a group context and the many processes that play a role in those settings determine much of human behavior. Thus, we consider this set of studies an initial step into a better description of how emotions shape intragroup influence dynamics.

In conclusion, we have shown that in a group context, happiness and anger are interpreted as signals of a target's inclusionary status. It is happiness that produces the comfortable feeling of acceptance, whereas anger creates a temporary sensation of distance between the individual and the group. By leaving the door open for re-acceptance, anger may produce lasting changes in the behavior of individual group members.

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Table 4.2: Means and standard deviations for expressed emotions, according to self-report and peer-report (Study 4.4).

			Condition				
			Majority Angry		Majority Non-Emotional	Majority Happy	
Instruction:			Anger	No Emotion	No Emotion	Happiness	No Emotion
Measure of Anger	Self-Report	<i>M</i>	3.08*	1.65	1.27	1.18	1.21
		<i>SD</i>	1.56	0.88	0.50	0.38	0.33
	Peer-Report	<i>M</i>	2.51*	1.23	1.27	1.17	1.15
		<i>SD</i>	1.58	0.32	0.37	0.36	0.19
Measure of Happiness	Self-Report	<i>M</i>	4.15	3.30	4.38	5.24*	4.25
		<i>SD</i>	1.49	1.42	1.19	1.08	1.41
	Peer-Report	<i>M</i>	4.17	4.22	4.77	4.94	4.81
		<i>SD</i>	1.14	1.04	0.75	0.95	0.92

Note: Within each row, bold-faced means should be the highest for a successful manipulation.

* Mean is higher than other means in the same row, based on a 95% confidence interval

CHAPTER FIVE

GENERAL DISCUSSION

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For a long time, social psychologists have known that one group member's deviance can provoke intense emotional reactions from other group members (e.g., Nemeth & Wachtler, 1974; Nemeth, 2010; Orcutt, 1973; Sampson & Brandon, 1964; Schachter, 1951). Yet, despite a great amount of research focusing on uncovering the processes involved in deviance and its behavioral opposite, conformity, the possibility that emotional reactions to deviance play a role in regulating deviance in groups has been largely overlooked. Maybe due to a paradigmatic focus on emotions as intrapersonal phenomena, the little speculation about the function of these emotional reactions focused on the group members who experience these emotions, proposing that they may indirectly help influencing the deviant by providing the motivational force that leads to attempts to persuade the deviant (Festinger, 1950), rather than on how the deviant group member may be influenced by these emotional reactions directly.

More recently, systematic explorations of the social functions of emotions have begun, and there is mounting evidence that emotions do not only have intrapersonal effects, but that people are influenced by other people's emotions as well (e.g., Barsade, 2002; Hatfield, Cacioppo, & Rapson, 1994; Van Kleef, 2009; Van Kleef, Van Doorn, Heerdink, & Koning, 2011). Research into the group-level functions of emotions has so far mainly been concerned with how affect spreads in groups (e.g., Barsade, 2002; Barsade & Gibson, 1998; Kelly & Barsade, 2001; Spoor & Kelly, 2004; Totterdell, Kellett, Teuchmann, & Briner, 1998), but offers too little granularity for understanding the functions that specific emotional reactions to deviance may have. Specifically, the valence-based approach that is taken does not take into account that different emotional expressions that are similar in valence may have distinct interpersonal effects (e.g., Van Kleef, De Dreu & Manstead, 2010; Van Kleef et al., 2011; Lelieveld, Van Dijk, Van Beest, Steinel, & Van Kleef, 2011; Lelieveld, Van Dijk, Van Beest, & Van Kleef, 2013), and that not all interpersonal effects of emotions can be explained by affective contagion (e.g., Van Kleef, 2009; Van Kleef et al., 2011). A better understanding of the consequences of emotional reactions to deviance thus requires a more fine-grained approach to studying how group members influence each other through their emotional expressions. In this dissertation, I have taken such an approach. The findings in this dissertation indicate that there is indeed more to the emotional reactions to deviance than previously assumed: they are functional in regulating the deviant's behavior.

In the remainder of this chapter, I will first summarize the main findings presented in this dissertation, and I will present a theoretical model that integrates and extends these findings (Figure 5.1). I will discuss how this model goes beyond the current findings, and highlight new directions for research based on the model. Subsequently, I will discuss the more general implications of this dissertation for theorizing about the social functions of emotions in groups, and propose avenues for future research.

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Summary of Main Findings

In Chapter 2, I investigated one of the central ideas in this dissertation: that happy expressions signal acceptance, and that angry expressions signal rejection. Given that emotions are assumed to have evolved because they help co-ordinate and regulate social interactions (Fischer & Manstead, 2008, in press; Keltner & Haidt, 1999), and given that being accepted in a group was and is of fundamental importance for (social) survival (e.g., Baumeister & Leary, 1995), I hypothesized that the social implications of emotional expressions in terms of acceptance or rejection should be quickly accessible to an observer. In six studies, I measured the implicit associations between emotional expressions and acceptance/rejection. A joint analysis of all six studies using a meta-analytical technique indicated that with presentation times as short as 50ms, happy expressions were more strongly associated with acceptance than other emotional expressions, and angry expressions were more strongly associated with rejection than other (negative) emotional expressions. Moreover, these associations were robust across three different conceptualizations of the acceptance/rejection dimension (acceptance/rejection, warm/cold [e.g., Williams & Bargh, 2008] and close/distant [e.g., Trope & Liberman, 2010; see also IJzerman & Semin, 2009]). These findings support the ideas that happy expressions are interpreted as signs of acceptance and that angry expressions are taken as signs of rejection, and they indicate that these associations do not merely reflect the valence of these emotions.

In Chapters 3 and 4, I also investigated whether emotional reactions, as signals of acceptance and rejection, affect the degree to which a deviant feels accepted or rejected. Furthermore, I investigated whether emotional reactions, by influencing felt acceptance or rejection, also influence subsequent conformity (Chapter 3 and 4), and how this influence changes according to the number of emotional reactions to deviance (Chapter 3).

In Chapter 3, I investigated how varying numbers of angry reactions to deviance influence the extent to which the deviant feels rejected and conforms. Given that a group situation (by definition) involves multiple individuals, the other group members' emotional reaction to deviance is not necessarily unanimous. What should we expect in terms of rejection and conformity if, for instance, only two out of four majority members react with anger to deviance? I built on work on majority size and social influence in groups (e.g., Bond, 2005; Latané, 1981) to hypothesize that with every extra angry reaction, a deviant should feel more rejected. In addition, I predicted that this increased rejection should translate into higher conformity. In both studies reported in this chapter, I found that the relation between the number of angry reactions and felt rejection can be described as positive and linear. Thus, every extra angry reaction increases the extent to which the deviant feels rejected. Contrary to the hypothesis, however, I also found negative relation between felt rejection and conformity in both studies, independent of whether conformity was public (which

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makes conformity more instrumental) or private (Study 3.2). Closer inspection of the data from Study 3.2 revealed, however, that this negative relation between felt rejection and conformity was not found for participants who felt less anonymous and who were relatively less deviant. Because similarity produces attraction (e.g., Montoya et al., 2008), less deviant participants may have felt more attracted to the group, which would have translated into a greater desire for re-acceptance. Thus, this explorative analysis suggests that both the instrumentality of conformity and the desirability of re-acceptance are involved in determining whether rejection leads to conformity. However, the main finding from Chapter 3 pertains to the numerical relation between angry reactions and rejection: Every single angry reaction to deviance increases the extent to which the deviant feels rejected.

In Chapter 4, I investigated more systematically the role of the desirability of re-acceptance and the instrumentality of conformity that was suggested in the explorative analysis in Chapter 3. Based on the ideas that conformity is a way to elicit acceptance and liking from a group (e.g., Hollander, 1960; Levine & Moreland, 1994; Moreland & Levine, 1989) and that conformity is strategic behavior aimed at eliciting acceptance (see also Asch, 1956; Cialdini & Goldstein, 2004; Cialdini & Trost, 1998), I hypothesized that angry reactions (relative to happy reactions) to deviance are more likely to elicit conformity from the deviant when conformity is instrumental, and when reacceptance is desirable. I used a variety of paradigms (ranging from scenario studies to actually interacting groups) in which all other group members (the majority) unanimously responded with the same emotional reaction to deviance. Congruent with the findings from Chapters 2 and 3, I found in all five studies that an angry majority increased the extent to which the deviant felt rejected, and that a happy majority decreases the extent to which a deviant feels rejected (i.e., increases felt acceptance). Furthermore, in all four studies in which a conformity measure was included (Studies 4.2 to 4.5), I found that angry reactions can indeed increase conformity relative to neutral or happy reactions, and that this increased conformity can be attributed to the increase in felt rejection following the angry reactions. However, I also found evidence for the boundary conditions of such influence: For angry reactions to elicit conformity, the situation needs to be structured in such a way that it promotes the desirability of acceptance, and the instrumentality of conformity. More specifically, with regard to the desirability of acceptance, I found that conformity after angry reactions is more likely when the deviant has no alternatives to the current group (Study 4.2) and when the deviant is a peripheral, rather than a prototypical group member (Study 4.5). With regard to the instrumentality of conformity, I found that only in cooperative settings, where conformity facilitates group goal attainment (e.g., Festinger, 1950) and is therefore more likely to be appreciated by groups than in competitive situations (cf. Berkowitz, 1957), angry reactions are associated with increased conformity pressure (Study 4.3). Finally, in Study 4.5, I contacted participants again for a follow-up posttest three weeks after the

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main study, and found evidence that angry reactions to deviance can elicit lasting conformity. Taken together, the findings in Chapter 4 further substantiate the proposed role of the instrumentality of conformity and the desire for reacceptance: Angry reactions lead to conformity when (i) conformity is instrumental and (ii) re-acceptance is desirable.

Simply put, the findings in this dissertation show that emotional reactions to deviance are functional in regulating deviance. Emotional reactions influence how accepted the deviant feels. By making the deviant feel rejected, angry expressions may elicit conformity. Happy reactions to deviance, on the other hand, make the deviant feel accepted but do not lead to conformity. These findings thus show that the most frequently described reactions to deviance – hostility and anger (e.g., Nemeth & Wachtler, 1974; Nemeth, 2010; Orcutt, 1973; Sampson & Brandon, 1964; Schachter, 1951) – indeed fulfill one of the group-level social functions of emotions described by Keltner and Haidt (1999): They help resolve a group-related problem. Deviance poses a potential problem because it may frustrate group goal pursuit (cf. Festinger, 1950), and this problem is resolved when the deviant conforms in the face of the majority's anger.

Extending the Findings:

A Model of Emotional Reactions to Deviance and Conformity

Although the findings in this dissertation clearly show that emotional reactions to deviance may be functional in regulating deviance, they also show that there is no one-to-one relationship between angry reactions and conformity. A better specification of how and when these reactions are functional thus requires explicating the underlying process. Figure 5.1 proposes an integrated theoretical model of how emotional reactions to deviance influence conformity, which goes slightly beyond the findings presented in this dissertation. It is intended to provide a more specific explanation for why angry reactions to deviance can both increase (Studies 4.2, 4.3, 4.4 and 4.5) and decrease conformity (Studies 3.1 and 3.1). The model is formulated from the perspective of the deviant. Every angry reaction is expected to increase the degree to which the deviant feels rejected, whereas every happy reaction is expected to decrease the degree to which the deviant feels rejected (i.e., increase perceived acceptance). Rejection simultaneously triggers two competing motives or goals, retaliation and reconnection, which have opposite effects on conformity: Retaliation decreases conformity, whereas reconnection increases conformity. Which of these motives takes precedence is determined by contextual factors. More specifically, the reconnection motive will take precedence over the retaliation motive (leading to increased conformity) to the extent that the deviant (i) is concerned with being re-accepted and

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(ii) conformity is instrumental in gaining reacceptance. Otherwise, retaliation in the form of anti-conformity is more likely.¹

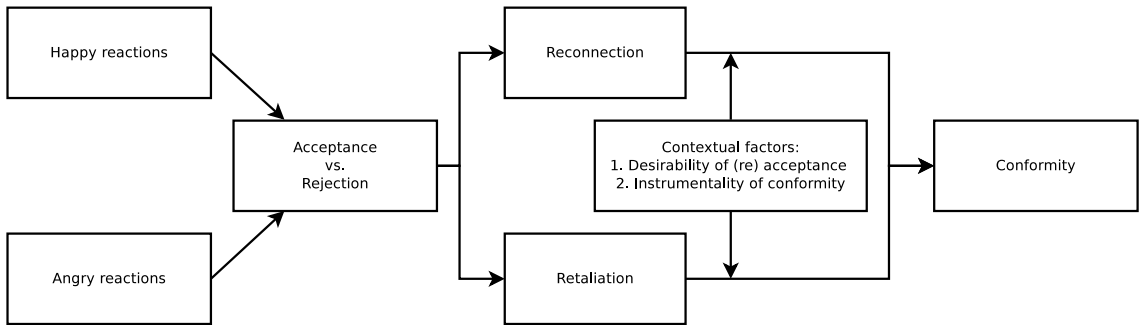


Figure 5.1: *An extended theoretical model of how emotional reactions to deviance influence the deviant.*

The model goes beyond the findings presented in this dissertation by proposing two motivational pathways that influence conformity. The reconnection motive reflects a desire to restore the sense of belonging. Conformity helps restore the sense of belonging, because it is an effective means to elicit (re)acceptance (e.g., Hollander, 1960; Levine & Moreland, 1994; Moreland & Levine, 1989). The retaliation motive, on the other hand, reflects a desire to aggress against the cause of the rejection experience, that is, the group. It is related to feelings of dejection, anger, frustration, and resentment that may all be triggered directly or indirectly by the rejection situation. These feelings have been shown to occur in many rejection situations, and they have been proposed to play a key role in triggering the anti-social behavior that frequently follows ostracism (e.g., Buckley, Winkel & Leary, 2004; Chow, Tiedens, & Govan, 2008; Stenseng, Belky, Skalicka, & Wichstrøm, 2014; Williams, 2007; 2009) as well as motivating aggressive behavior in general (e.g., Averill, 1982). Importantly, when deviance elicits angry reactions, frustration and anger may also be directly triggered in the deviant by the other group member's angry reactions through emotional contagion (Hatfield, Cacioppo, & Rapson, 1994). In a negotiation context,

¹ Study 4.2 has shown that the frustration associated with rejection may also lead to an avoidance of the aversive situation altogether (i.e., leaving the group) when a deviant is given the opportunity to do so. Thus, in these cases, angry reactions to a deviant's behavior lead neither to conformity nor to anti-conformity. Predicting when people leave the group is, however, not the main focus of my dissertation, and it is therefore omitted from the model.

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the desire for retaliation following the partner's expression of inappropriate anger has been found to lead to higher negotiation demands, which frustrates the negotiation by risking an impasse (Van Kleef & Côté, 2007). In the current context, the retaliation motive is likely to trigger purposeful deviance or anti-conformity because this harms the group by hindering group goal attainment (Festinger, 1950).

The retaliation and reconnection motives are proposed to be triggered simultaneously by rejection. This simultaneousness is based on two grounds. First, the related experience of ostracism has been found to simultaneously threaten a number of basic needs (Zadro, Williams, & Richardson, 2004), including the need to belong, the need for control, and self-esteem. Each threatened need may motivate subsequent behavior. For instance, anti-social behavior following ostracism is often interpreted as motivated by a desire for control (e.g., Williams, 2007; 2009), whereas pro-social behavior is interpreted as motivated by a desire for belonging (see, e.g., Smart Richman & Leary, 2009; Williams, 2007; 2009). The finding that both anti-social (e.g., Leary, Twenge, & Quinlivan, 2006) and pro-social (Williams, Cheung, & Choi, 2000) behavior may follow the same situation (ostracism in the Cyberball paradigm, in this case), suggests that both motives were active initially and contextual factors merely determined the relative influence of these motives. Second, recent research by Sommer and Bernieri (2015) suggests that people who feel rejected may attempt to fulfill multiple motives simultaneously. In this study, participants learned that someone with whom they had just interacted, disliked them. They were then paired to another participant and discussed a number of personal topics. Even though the rejected participants expressed dislike of their new partner by giving them low ratings for likability, they actually behaved in a warmer and more likable fashion than non-rejected participants during the interaction. These findings suggest the behavior of rejected participants was simultaneously motivated by a desire for reconnection (leading to likable behavior) and retaliatory tendencies (leading to lower ratings of likeability).

Although the simultaneous activation of both motives may favor behavior that can fulfill both motives at the same time (as in the Sommer & Bernieri [2015] study), they are mutually exclusive when it comes to conformity. Because conformity is in the interest of the group (e.g., Festinger, 1950, Klein, Spears, & Reicher, 2007), it is incompatible with the retaliation motive. Similarly, anti-conformity is incompatible with the reconnection motivation because it further frustrates group goal pursuit and is likely to lead to even stronger reactions and rejection (Schachter, 1951). This means that contextual moderators that determine the relative influence of each motive are key in determining whether angry reactions may increase conformity. These moderators are the moderators that determine when angry reactions to deviance may elicit conformity (Chapter 4): a desire for reacceptance, and instrumentality of conformity.

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In addition to being more specific about the underlying process, there are several new predictions that follow from the model. First, angry and happy reactions are proposed to have independent effects on perceived rejection. Chapter 3 has already demonstrated that with each extra angry reaction, the deviant feels more rejected, and it may similarly be predicted that each happy reaction will decrease rejection (i.e., increase acceptance). Study 4.3 provides initial evidence for the independence of these effects, although in this study, we focused on the strength of each emotional reaction rather than on the number of emotional reactions. We found that in recalled instances of deviance, stronger angry reactions were associated with more rejection, and stronger happy reactions were associated with less rejection (i.e., more acceptance). Future research may thus fruitfully test whether angry and happy reactions independently influence the extent to which the deviant feels rejected (vs. accepted), as well as exploring potential asymmetries in the effects of angry and happy reactions. Because “bad” is typically stronger than “good” (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), it may, for instance, be predicted that a single angry reaction has a proportionally larger influence on rejection than a single happy reaction.

A second new prediction that follows from the model is that when conformity is less instrumental and when reacceptance is less desirable, angry reactions should decrease conformity relative to happy reactions. Under these circumstances, the retaliation motive triggered by angry reactions should be more influential than the reconnection motive, which would result in deliberate anti-conformity. Happy reactions, on the other hand, are expected to trigger neither a motivation for reacceptance nor for retaliation, and therefore should not affect conformity. Studies 3.1 and 3.2 suggest that in such a situation, angry reactions indeed trigger anti-conformity. In both studies, participants may have felt little desire to be re-accepted because they maintained their anonymity throughout the session and had no prospect of meeting the other group members. Furthermore, conformity may not have been perceived as instrumental either. In Study 3.1, conformity was measured with a private response. Although some participants responded publicly in Study 3.2, which was intended to enhance the instrumentality of conformity, this manipulation may not have had the intended effect because participants were still anonymous in the mass testing session. Future research may build on these initial findings and find more direct evidence for this prediction by more directly comparing the impact of angry and happy reactions in a deviance situation.

A final insight that can be gained from this model is that even when angry reactions elicit conformity, the motive for retaliation is also activated. This has implications for the effectiveness of angry reactions in eliciting conformity in both the short and longer term. In the shorter term, this retaliation motive is not fulfilled by conforming, and may thus remain active for some time (e.g., Denzler, Förster, & Liberman, 2009; Förster, Liberman, & Higgins, 2005). It may therefore affect behavior in a different context or be expressed in a different way, for instance in the

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form of aggression against unrelated people (e.g., Twenge, Baumeister, Tice, & Stucke, 2001), or, analogous to the aforementioned Sommer and Bernieri study (2015), in concurrent devaluation of the group. The longer-term consequences follow from these shorter-term consequences. Even though angry reactions may effectively elicit conformity from the deviant, multiple episodes of angry reactions and hostility may over time, through the recurring activation of a retaliation motive, lead to decreased identification with the group, and a dislike for individual group members. Because this would reduce the desirability of re-acceptance, the effectiveness of angry reactions in eliciting conformity may over time decrease. This process may ultimately even contribute to the alienation, depression, and helplessness described as part of the long-term 'resignation' stage of ostracism (e.g., Williams, 2009).

The Social Functions of Emotions in Groups

The findings presented in this dissertation show that part of the reason why emotions are socially functional on the group level, is that emotional expressions convey social signals. Treatments of the group-level functions of emotions have attributed these functions primarily to collective emotional behavior (Keltner & Haidt, 1999; Spoor & Kelly, 2004), which refers to the interplay between individual-level and group-level affect that has been investigated in the context of group-affect theory (e.g., Barsade, 2002; George, 1995; Kelly & Barsade, 2001; Totterdell et al., 1998; Totterdell, 2000). Yet, the findings in this dissertation indicate that the signaling of acceptance and rejection is also relevant to two of the three group-level social functions of emotions proposed by Keltner and Haidt (1999): the solution of potential group problems, and the demarcation of group boundaries. By signaling rejection, emotional reactions may elicit conformity, and help to resolve problems associated with deviance (Festinger, 1950). Similarly, the signaling acceptance and rejection helps demarcate group boundaries because they provide information about the current group membership status to both the target of these expressions, as well as to others present in the situation. This explains why, for instance, photographed people are more likely to be categorized as out-group members if they express anger than if they express happiness (Dunham, 2011).

It may be therefore be more appropriate to formulate the group-level functions of emotion in such a way that they are not tied to a specific mechanism. The group-level functions of emotion distinguished by Keltner and Haidt (1999) may then be reformulated as follows: 1) emotions help to define group boundaries; 2) emotions help define and negotiate group-related roles and status; and 3) emotions help groups resolve problems. These social functions may be achieved through a number of different mechanisms, including a) emotions as intrapersonal motivators of group-related social behavior (e.g., Williams & DeSteno, 2009); b) collective emotional behavior through top-down or bottom-up processes (e.g., Kelly & Barsade, 2001; Klep et al., 2011); c) emotional signaling of acceptance versus rejection, high versus

low status, dominance versus submission, etc. (e.g., Fridlund, 1994; Hess, Blairy, & Kleck, 2000; Knutson, 1996; Schmid Mast & Hall, 2004; Shariff, Tracy, & Markusoff, 2009; Tiedens, Ellsworth, & Mesquita, 2000; this dissertation) and d) inferential processes (e.g., Van Kleef, 2009). Such a clear distinction between functions and mechanisms suggests new ways through which previously described social functions may be fulfilled. For instance, it suggests the possibility that collective emotional behavior also contributes to the definition and negotiation of group-related statuses – a social function that was previously tied to social signaling of status (Keltner & Haidt, 1999). Given that leaders have proportionally greater influence on group-level affect than followers (Sy, Choi, & Johnson, 2013; Sy, Côté, & Saavedra, 2005), it may indeed be possible that, for instance, higher status will also be inferred when one group member is perceived to have a proportionally greater effect on group mood. The decoupling of mechanisms and functions may therefore not only be more appropriate in light of the findings presented in this dissertation, but it could also inspire an open-minded search for more mechanisms that may be involved in intragroup emotional influence.

Rejection-signaling, Acceptance-signaling, and Valence

Intuitively, we know that angry reactions to our behavior are negative, and that happy reactions are positive. Do we need the added complexity of arguing that emotional expressions signal rejection and acceptance, or may the findings in this dissertation be accounted for by a simpler explanation in terms of the positivity or negativity of an emotional reaction? If we assume that the valence of an emotional reaction is derived from the intrapersonal subjective experience of these emotional reactions (e.g., Russell, 2003; Russell & Barrett, 1999), valence is not a suitable alternative explanation. In Chapter 2, I found that angry expressions are more strongly linked to rejection than fearful and sad expressions. These emotions are not typically distinguished in terms of valence (e.g., Russell, 2003), and the pattern of results did not correspond with the valence ratings obtained during the validation of the stimulus set (Van der Schalk et al., 2011), even though participants were explicitly asked to indicate how the person in the picture felt. Furthermore, in Study 4.1, I found that angry reactions lead a deviant to feel more rejected than disappointed reactions, even though both reactions are associated with a negative subjective experience. I also found that disappointed reactions did not lead to more perceived rejection than neutral reactions, although disappointment is a more negative subjective experience.

If we assume that the valence of an emotional reaction reflects its meaning to an observer instead, the idea that emotional expressions signal different degrees of acceptance may in fact suggest a new explanation for why emotional reactions ‘have’ valence. From this perspective, the most likely reason for why emotional reactions have a positive or negative meaning is that they lead to the anticipation of positive or negative (social) consequences. Congruent with their intuitive valence, angry

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expressions have been argued to signal imminent negative consequences such as threat and aggression (e.g., Averill, 1982; Esteves, Dimberg, & Öhman, 1994; Fridlund, 1994; Marsh, Ambady, & Kleck, 2005), and happy expressions to signal imminent positive consequences such as affiliation (e.g., DeWall, Maner, & Rouby, 2009; Fridlund, 1994). On the basis of the findings in this dissertation, it may similarly be argued that angry expressions signal rejection, and that happy expressions signal acceptance. Thus, we may think of an angry reaction as negative because it makes us feel rejected, rather than the other way around.

Taken together, it is clear that that valence alone is not a sufficient explanation for the findings presented in this dissertation. The idea that the meaning of an emotional expression determines (in part) its valence may be an interesting avenue for future research, however. It implies that a context that influences the meaning of an emotional expression should also influence its valence. Congruent with this idea, there is already some evidence that responses to emotional expressions depend on their contextualized meaning (Hess & Fischer, 2013). For instance, the cooperativeness of a situation has been found to moderate the facial muscle response to an angry facial expression, indicating mimicry (anger) in a competitive situation, and counter-mimicry (supplication) in a cooperative situation (Lanzetta & Englis, 1989; Likowski, Mühlberger, Seibt, Pauli, & Weyers, 2011). Future research may test this idea more directly, for instance by investigating whether the valence of an emotional reaction to deviance changes depending on contextual factors that influence the relevance of rejection to an observer (e.g., group membership of the rejecters).

Is Anger an Exclusion Emotion?

Although the link between angry reactions and rejection has received strong support in this dissertation, anger is not typically considered to be an exclusion emotion (Fischer & Roseman, 2007; Van Kleef, De Dreu, & Manstead, 2010). This role is reserved for contempt. In terms of Orcutt's (1973) distinction between inclusive and exclusive reactions to deviance, anger is associated with more inclusive action tendencies (aimed at coercion, but also at maintaining a relation with the target), whereas contempt is associated with more exclusive reactions, including rejection of the target (Fischer & Roseman, 2007; see also Molden, Lucas, Gardner, Dean, & Knowles, 2009). Also supporting the idea that anger is a more including emotion than contempt, non-affiliative tendencies (operationalized as more severe depression) have been found to augment the expression of contempt, but not of anger (Girard et al., 2014). This characterization of anger and contempt is, however, primarily based on research on the intrapersonal level.

Focusing on the interpersonal effects of anger and contempt, the two emotions appear to be more difficult to separate. The only article to my knowledge that has investigated interpersonal effects of contempt reports similar consequences of contemptuous feedback as have been described in this dissertation for anger: In a

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business context, a co-worker's expressions of contempt simultaneously increased task effort and aggression (Melwani & Barsade, 2011). Only one study (Study 1) directly compared the effects of anger to those of contempt, and found generally higher levels of aggression and task effort after contempt than after anger. There is reason to doubt the successfulness of the anger manipulation in this study though, because the levels of verbal aggression after angry feedback were lower than those after neutral (non-emotional) feedback – the opposite of what may be expected after a confrontation with angry reactions. Thus, in terms of their interpersonal effects, there appears to be overlap in the motivational implications and subsequent behavior between anger and contempt.

Conceptually, it may be argued that a key difference is that angry expressions signal imminent rejection, whereas contempt signals that rejection has already occurred. The idea that angry expressions in general constitute a threat is indeed prevalent in the literature (e.g., Averill, 1982; Marsh et al., 2005; Sinaceur, Van Kleef, Neale, Adam, & Haag, 2011; Wubben, De Cremer, & Van Dijk, 2009). For instance, in his ethological view on emotions, Fridlund (1994) argues that an angry expression reflects a threat of aggression, rather than a read-out of aggressive intent. It is a bad idea to express anger when you really want to harm another person, because the angry expression would serve as a warning, making it more difficult to inflict significant harm on the other person compared to when this person is unprepared.

This distinction between imminent and actual rejection may, however, be more relevant from a theoretical than from a practical point of view. From the perspective of an observer, they are most likely two sides of the same coin. We know that when deviance elicits anger, continued deviance will ultimately lead to ostracism or exclusion from the group (Schachter, 1951). After experiencing a couple of these angry reactions-exclusion sequences, people may become conditioned to feel actual rejection after recognizing anger in fellow group members. Furthermore, due to their social monitoring system (Pickett & Gardner, 2005), people are highly sensitive to threats to their belonging. It is likely that such a threat can already be experienced when someone is not actually excluded yet, because this would motivate a person to behave in a way that prevents actual exclusion from occurring. Thus, even though angry expressions are theoretically more likely to signal imminent rather than actual rejection, observers may still interpret anger as a signal of actual rejection.

The preceding discussion suggests that anger and contempt may be more similar in terms of exclusion from an interpersonal perspective than from an intrapersonal perspective. There are different ways in which the differences on the intrapersonal level may translate to the interpersonal level, however. For instance, angry expressions are more likely to be picked up than contemptuous reactions. The inclusive intentions associated with anger are more likely to lead to seeking out a social situation in which anger may be expressed than the exclusive intentions associated with contempt. And even if such a situation occurs, expressions of contempt are much more difficult to

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recognize as such than expressions of anger (Russell, 1994). Finally, even though anger and contempt may both cause a deviant to feel rejected, a deviant who is aware of the subtle distinction between anger and contempt may still infer that conformity will be more instrumental after an angry expression than after a contemptuous reaction.

A Role for Happiness

The evidence presented in this dissertation demonstrates that happy expressions are signals of acceptance, yet the studies have primarily focused on the downstream consequences of angry reactions. This asymmetry reflects that both the intra- and interpersonal emotion literatures argue that anger calls for immediate behavioral change, whereas happiness does not (e.g., Fischer & Manstead, 2008; Fischer & Roseman, 2007; Frijda & Mesquita, 1994). Thus, angry reactions are simply more likely to influence the deviant's immediate behavior than happy reactions. Yet, although the prototypical reaction to deviance is anger (e.g., Festinger, 1950; Juvonen, 1991; Nemeth and Wachtler, 1974; Sampson & Brandon, 1964), these angry reactions are typically found in response to quite extreme forms of deviance, and it is possible that milder forms of deviance may also elicit happy reactions. Across different types of situations, happy reactions may in fact be even more prevalent than angry reactions because happiness may also be expressed with affiliative intentions (Kraut & Johnston, 1979), to reinforce non-deviant behavior, etcetera. If these happy expressions do not influence immediate behavior, what consequences do they have? Based on the acceptance-signaling function of happiness, it is possible to speculate about the downstream consequences of happy expressions in groups in general, and happy reactions to deviance in particular.

One potential consequence of happy reactions to one group member's behavior in general is that they may enhance this group member's identification with the group. In-group affect is one of the three dimensions of identification (Cameron, 2004; Leach et al., 2008) and refers to the extent to which one feels positive about belonging to a certain group. Through signaling acceptance, happy reactions to one's behavior may thus foster positive feelings about the group, thereby increasing identification (see also Spoor & Kelly, 2004; Walter & Bruch, 2008). If this is the case, happy reactions may play a role in creating commitment to the group (Levine & Moreland, 1990; 1994) and be especially prevalent in the forming stages of group life (Tuckman, 1965). These positive effects of happy reactions on identification are likely to require more than just a one-shot interaction, however. Longer-term change in identification may only occur after repeated positive interactions, analogous to how angry reactions may, over time, decrease the deviant's identification (as discussed above).

Focusing on the impact of happy reactions to deviance on the deviant specifically, these (and other positive emotional) reactions may encourage the deviant to express him or herself more freely in the future. According to self-determination theory (Ryan & Deci, 2000), feeling secure and related to other people is crucial to allow creative,

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intrinsically motivated behavior. By signaling acceptance, happy reactions may heighten the sense of relatedness, thereby creating the circumstances that are conducive to such self-motivated behavior. This effect may be even more pronounced for more specific positive emotional reactions such as pride and admiration, because in addition to acceptance, these reactions potentially signal competence, which is another precondition for self-determined behavior (Algoe & Haidt, 2009). Finally, happy and other positive emotional reactions to deviance could also help the deviant fulfill the need to belong and the need for uniqueness simultaneously. The need for uniqueness refers to the idea that although people want to belong to groups, they also want to stand out positively in the groups they belong to (Hornsey & Jetten, 2004; see also Brewer, 1991). The simultaneous fulfillment of the need to belong and the need for uniqueness is typically achieved through taking on different roles and responsibilities in groups, but seeking out types of deviance that elicit happy (i.e., accepting) reactions may be another route.

Instead of a direct impact on behavior, happy reactions may thus primarily have consequences for identification and the sense of relatedness in the longer term. Through increasing identification and a sense of relatedness, happiness and other positive emotional expressions in general may create circumstances under which a group member cares for the group's well-being, yet allows this group member to deviate from the group norm if this is perceived to be beneficial for the group (Packer, 2007; Packer & Chasteen, 2009) – allowing the group member to contribute significantly to group functioning. And finally, by reinforcing the bond between the group and the individual, happy expressions may over time create the desire for reacceptance that is required for angry reactions to be functional in changing a group member's behavior.

Open Questions and Future Directions

As I described in the Introduction, there are many facets to intra-group emotional influence, and it is impossible to cover all possible ways in which group members are influenced by each other's emotions within the scope of one dissertation. I have already highlighted a number of specific research questions in the discussion sections of the preceding chapters. In this section, I will briefly discuss several more avenues such future research may take.

Firstly, future research may test whether the current findings hold across different types of groups. An especially interesting variable in this regard is the entitativity of the group (Crawford, Sherman, & Hamilton, 2002; Lickel et al., 2000), which refers to the 'groupiness' of a group. Entitativity is determined by a number of factors, including the size of the group, the similarity between members, and the degree of interaction, but also by the extent to which group members share a common goal. Several of these factors have already been linked to normative influence. For instance, face-to-face interaction leads to higher conformity than computer-mediated

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interaction (Bond, 2005), and cohesion and having a common goal determine the pressure toward uniformity (Festinger, 1950; Schachter, 1951). Furthermore, Study 4.3 shows that the cooperativeness of the situation determines whether or not angry reactions may induce conformity. Entitativity has already been found to determine the extent to which group members are concerned about their reputation (Cavazza, Pagliaro, & Guidetti, 2014), and from there, it is a small step to predict that angry reactions will be more effective in eliciting conformity in more entitative groups (such as members of a sports team) than in less entitative groups (such as a group of factory workers).

Another incremental research avenue would be to examine whether it makes a difference if the angry reaction is aimed at the person, or at the idea. In the studies reported in this dissertation, the angry reaction was either targeted at the idea, or the target was not specified. On the one hand, it may be argued that it does not matter whether angry reactions are aimed at the person or the idea. People tend to quickly take ownership of their ideas (Pierce, Kostova, & Dirks, 2003), and may readily interpret a negative reaction to their ideas as an attack on themselves. On the other hand, research in a negotiation context has shown that expressing anger about an offer is generally more effective in eliciting concessions than expressing anger about the person (Lelieveld et al., 2011; Steinel, Van Kleef, & Harinck, 2008), and similarly, that negative evaluations of ideas are more effective in stimulating group creativity than negative evaluations of the source of the idea (Troyer & Youngreen, 2009). These results suggest that angry reactions that are aimed at the person may trigger the retaliation motive to a greater degree than angry reactions that are aimed at the idea.

On a very general level, this dissertation shows that group members are influenced by other group members' emotional expressions. Future research may extend this insight to different ways in which intra-group emotional influence may take place. For instance, observing one group member's emotional reaction about another group member's behavior may influence a third group member's behavior by providing information about the norms in the situation (Hareli, Moran-Amir, David, & Hess, 2013). An initial series of five studies into such 'vicarious norm learning' shows that observers indeed infer normative information from such emotional interactions, and that different emotional reactions inform different types of norms (Heerdink, Koning, Van Kleef, & Van Doorn, in prep.). Specifically, through their links to specific moral codes (Rozin, Lowery, Imada, & Haidt, 1999), observing angry and disgusted expressions leads to inferences that certain behavior (e.g., smoking) is either formally prohibited or considered inappropriate. Research has yet to demonstrate specific behavioral effects of these norms, however. Furthermore, future research may focus on minority influence rather than the majority influence studied here. As discussed more extensively in Chapter 3, minorities may be more or less influential depending on their emotional expressions. For instance, through an association with certainty, angry

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overtone may increase the persuasiveness of arguments (Karmarkar & Tormala, 2010; Lerner & Keltner, 2001), which should enhance minority influence.

Finally, just as I have built upon theorizing and research at both the intrapersonal and interpersonal levels of analysis, the ideas presented here may inform research on different levels of analysis as well. Of course, the specific group-level concepts described in this dissertation (deviance, conformity, acceptance, and rejection) do not translate literally to different contexts, but there is reason to assume that parallel processes operate there. For instance, if someone behind us in the leftmost lane on the highway angrily flashes his headlights in our rear-view mirror, we may be tempted to retaliate by not giving in (at least, I am). Similarly, expressing anger in an online dispute tends to lead to negative outcomes, unless the counterpart is very vulnerable (Friedman et al., 2004). These examples suggest that a desire for retaliation may also be triggered in a dyadic context, and it may be overcome when there is sufficient interdependency (cf. Van Kleef & Côté, 2007) – similar to how the desirability of reacceptance determines the relative influence of retaliation and reconnection (Figure 5.1). I hope that the findings presented here will inspire researchers to look for conceptually similar processes outside of the group context as well.

Concluding Thoughts

I started this dissertation by describing a study by Nemeth and Wachtler (1974), in which a confederate's deviance provoked strong angry reactions from the other group members. I can now return to the question that I asked about this situation: What would have happened if the deviant had not been a confederate, but a naive participant? Analyzing the situation using the ideas presented in this dissertation, I would argue that for such a participant, the interaction with highly similar fellow participants would have made re-acceptance desirable. Conformity would have been clearly instrumental, because it would help the group make their decision about how much compensation to award to Mr. Smith, and the participant's shift in opinion would be readily visible to the others. Thus, I would argue that the deviant would have – probably grudgingly – given in to his peers. And, more speculatively, his peers' happiness about this change may have caused him to feel re-accepted by his peers, thereby reinforcing his membership in the group. And upon adjourning, the former deviant would maybe even have felt a little sad because belonging, in the end, is often much more important than clinging to one's beliefs.

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SUMMARY

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REGULATING DEVIANCE WITH EMOTIONS Emotional Expressions as Signals of Acceptance and Rejection

The behavior of an individual group member can provoke strong emotional reactions from other group members. This is especially true if the behavior constitutes an act of deviance, which is behavior that is intentionally or not intentionally different from a prevalent group norm. The social psychological literature documents several examples of these reactions to deviance, and characterizes them as extremely angry, hostile, and aggressive. But despite a long standing interest in how groups respond to and regulate the behavior of individual group member between the extremes of deviance and conformity (e.g., Asch, 1956; Bond, 2005; Festinger, 1950; Hornsey & Jetten, 2014), there is little understanding of the role that these emotional reactions may play in the regulation of deviance, or of emotional influence processes in groups more generally. My dissertation answers the question of whether the deviant is affected by these emotional reactions, and, if so, in what way.

My answer to this question starts with the idea that different emotional expressions signal different degrees of acceptance. Specifically, I predict that angry reactions will lead the deviant to feel more rejected, whereas happy reactions will lead the deviant to feel more accepted. Because conformity is typically valued and appreciated by groups, a deviant group member may strategically conform to gain (re-)acceptance in a group when they feel rejected. Thus, because angry expressions signal rejection, they may elicit conformity from a deviant individual. However, there may be circumstances when conformity is not effective and/or not valued by a group. I therefore propose that two classes of moderators determine when angry reactions may increase conformity: (a) re-acceptance in the rejecting group needs to be desirable to the deviant and (b) conformity needs to be (perceived as) instrumental. Re-acceptance is desirable when the deviant is motivated to remain a member in the group, and if the deviant depends on re-acceptance to remain a member in the group. Conformity is instrumental when conformity is a viable way of seeking re-acceptance in the group. For this to be the case, the structure of the situation must be such that the group can observe the change in the deviant's behavior, so that they can subsequently re-accept the (former) deviant. In each of the three empirical chapters in my dissertation, I tested different parts of this theory.

In Chapter 2, I focused on the proposed acceptance-signaling and rejection-signaling function of emotional expressions. I tested this idea by measuring the implicit associations between different facial expressions and different conceptualizations of acceptance and rejection. Across six experiments, I found that happy expressions are indeed more strongly linked to acceptance than other emotional expressions, and that angry expressions are more strongly linked to rejection than other (negative) emotional expressions. Moreover, I found that the emotional expressions need to be presented for only 50ms for these associations to occur. These

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findings support the idea that happy expressions are interpreted as signs of acceptance and that angry expressions are taken as signs of rejection. Furthermore, these studies indicate that the associations between emotional expressions and degrees of acceptance do not merely follow the differences in valence between these emotions (i.e., expressions of anger triggered rejection-related concepts more strongly than did expressions of other negative emotions).

In Chapter 3, I investigated how multiple emotional reactions to deviance jointly influence the deviant. Given that a group situation (by definition) involves multiple individuals, the other group members' emotional reaction to deviance is not necessarily unanimous. But what should we expect in terms of rejection and conformity if, for instance, only two out of four majority members react with anger to deviance? To investigate this, I systematically varied the number of angry reactions that a deviant received during a simulated interaction, and measured the extent to which the deviant felt rejected and conformed. In Study 3.1, I found that the relation between the number of angry reactions and felt rejection is best described as linear, and that this relation is not dependent on the total size of the majority. Thus, every extra angry reaction makes the deviant feel more rejected. Contrary to the hypothesis, however, I also found less conformity when the deviant felt more rejected. In Study 3.2, I therefore varied whether responses were made publicly or privately (which determines the instrumentality of conformity), and again found that felt rejection increased with every additional angry reaction. Although the overall relation between angry reactions and conformity was again negative in both the public and private decision conditions, closer inspection of the data revealed that this negative relation was not found for participants who felt less anonymous and who were relatively less deviant. These findings suggest that both instrumentality of conformity and the desirability of re-acceptance (less deviance implies more similarity, which produces attraction) are involved in determining whether angry reactions lead to conformity. However, the main finding from Chapter 3 pertains to the numerical relation between angry reactions and rejection: Every single angry reaction to deviance increases the extent to which the deviant feels rejected.

In Chapter 4, I focused especially on investigating the role of the instrumentality of conformity and the desirability of re-acceptance as determinants of whether (unanimous) angry reactions will pressure the deviant into conforming. In Studies 4.1 and 4.2, participants imagined that a majority unanimously reacted emotionally to their deviance. Consistent with the findings in Chapters 2 and 3, I found that angry reactions increased perceived rejection compared to other emotional reactions, and that happy reactions lowered perceived rejection (i.e., increase acceptance) compared to other emotional reactions. Furthermore, in Study 4.2, I found that when deviants did not have an alternative to the current group (which should increase the desirability of re-acceptance), angry reactions were more likely to trigger conformity than when alternative groups were readily available. Study 4.3 investigated the relations between

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emotional reactions, perceived rejection, and subjective conformity pressure across recalled real-world experiences with being deviant in a group. Across all situations, stronger angry reactions were associated with more perceived rejection, and stronger happy reactions were associated with decreased rejection. But most importantly, I found that only in cooperative situations (in which conformity is more instrumental because it is more useful, and therefore likely to be more appreciated, when there is a shared group goal), the majority's emotional reactions were associated with differences in conformity pressure: Stronger angry reactions were associated with more subjective conformity pressure, and stronger happy reactions were associated with less conformity pressure. In Study 4.4, I tested the effects of emotional reactions on conformity in real interacting groups composed of three naive participants. Two of these group members were instructed to express anger, happiness, or no emotion during a group problem-solving task. I focused on the third participant in each group, and found that participants who faced two angry group members had relatively less influence in the group. This effect was mediated by perceived rejection. Finally, in Study 4.5, I returned to the simulated interaction paradigm of Chapter 3 and found that angry reactions and the resulting perceived rejection were more likely to elicit conformity from peripheral deviants (for whom re-acceptance is more desirable) than from prototypical deviants. Moreover, I found that the change in opinion that these angry reactions caused was still apparent three weeks later. Together, the findings in this chapter indicate that angry reactions to deviance can elicit lasting conformity if (a) re-acceptance is desirable (Studies 4.2 and 4.5) and (b) conformity is instrumental in gaining re-acceptance (Study 4.3).

Conclusion

Together, the findings in this dissertation indicate that group members influence each other through the emotional reactions to each others' behavior. Furthermore, this dissertation shows that there is more to the emotional reactions to deviance than previously assumed: These emotional reactions help regulate deviance in groups. More specifically, the most frequently described emotional reactions to deviance – anger and hostility – appear to be functional, in the sense that they can help resolve potential problems associated with deviance by pressuring the deviant into conformity. However, for these reactions to be functional, re-acceptance needs to be desirable to the deviant, and conformity needs to be instrumental.

On the basis of these findings, I propose an extended theoretical model in which emotional reactions to deviance influence the deviant's behavior through two simultaneous motives, retaliation and reconnection, which have opposite effects on conformity: Retaliation decreases conformity, whereas reconnection increases conformity. The relative influence of each of these motives is determined by the two classes of moderators that have been shown in this dissertation to increase the likelihood of conformity after angry reactions: (a) re-acceptance is desirable and (b)

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conformity is instrumental. Three new insights follow from this model: (i) angry and happy reactions are proposed to have independent and opposite effects on perceived rejection; (ii) when conformity is less instrumental and when re-acceptance is less desirable, angry reactions should decrease conformity relative to happy reactions; (iii) even when angry reactions elicit conformity, the motive for retaliation is also activated. This has implications for the effectiveness of angry reactions in eliciting conformity in both the short and longer term. It implies, for instance, that angry reactions may simultaneously trigger conformity and lead to the devaluation of a group, and that angry reactions may affect behavior in a different context, or lead to the expression of retaliation a different way, such as hostility towards unrelated people (i.e., displaced aggression).

In addition to describing the consequences of emotional reactions to deviance, several more general theoretical conclusions follow from my dissertation. First, the social signals emitted by emotional expressions appear to be more important for the social functionality of emotions on the group level than previously assumed. The social functions of emotions on the group level have primarily been assumed to stem from collective emotional behavior, yet the findings in this dissertation show that emotions may also be involved in two social functions (the demarcation of group boundaries and the resolution of group-related problems) by signaling acceptance and rejection. Considering emotional expressions as social signals of different degrees of acceptance allows for the development of more specific predictions about how emotional reactions may affect a deviant individual's behavior, and when such influence will be functional, than may be obtained from a collective emotion-perspective.

A second implication is that anger may be a more 'excluding' emotion than previously assumed. Typically, contempt is considered to be the prototypical exclusion emotion, whereas anger is considered a coercive or aggressive emotion. This distinction is primarily based on evidence that the two emotions are linked to distinct action tendencies, however, and thus it is primarily based on evidence from the intrapersonal level of analysis. Given that angry reactions consistently led deviant individuals to feel rejected, the findings in this dissertation suggest that, on the interpersonal level, the two emotions may be more similar in terms of their consequences.

Finally, although happy reactions do not affect the deviant's behavior in the short term, the finding that happy reactions increase felt acceptance allows for some speculation about the longer-term consequences of these happy reactions. Happy reactions may play a role in reinforcing the bond between the group and the individual, for instance, by increasing the deviant's identification with the group. Thus, happy reactions may over time create the desire for re-acceptance that is required for angry reactions to be functional in changing a group member's behavior.

SAMENVATTING

REGULATING DEVIANCE WITH EMOTIONS
Emotional Expressions as Signals of Acceptance and Rejection

Het gedrag van één groepslid kan soms zeer sterke emotionele reacties van andere groepsleden uitlokken. Dit is zeker het geval wanneer het groepslid zich afwijkend gedraagt, wat wil zeggen dat het gedrag van dit groepslid al dan niet intentioneel afwijkt van de groepsnorm. In de Sociaal-Psychologische literatuur zijn verschillende voorbeelden van de reacties op dergelijk afwijkend gedrag te vinden, en worden deze reacties vaak gekarakteriseerd als boos, vijandig en agressief. Ondanks een lange onderzoeksinteresse in hoe groepen op het gedrag van individuele leden reageren, en hoe groepen het gedrag van individuele groepsleden beïnvloeden tussen de uitersten van conformiteit en afwijking (e.g., Asch, 1956; Bond, 2005; Festinger, 1950; Hornsey & Jetten, 2014), is er maar weinig bekend over de rol die deze emotionele reacties spelen in het reguleren van afwijkend gedrag in groepen, en over emotionele beïnvloeding binnen groepen in het algemeen. Mijn proefschrift gaat in op de vraag of het afwijkende groepslid wordt beïnvloed door deze emotionele reacties, en zo ja, hoe.

Mijn antwoord op deze vraag begint bij het idee dat emotionele expressies signalen zijn van verschillende niveaus van sociale acceptatie. Meer specifiek voorspel ik dat boze reacties ertoe leiden dat het afwijkende groepslid zich meer afgewezen voelt, en dat blije (enthousiaste of vrolijke) reacties ertoe leiden dat het afwijkende groepslid zich juist meer geaccepteerd voelt. Aangezien groepen het doorgaans waarderen als een groepslid zich conformeert, is conformiteit voor een afgewezen groepslid een geschikte strategie om heracceptatie te verkrijgen. Doordat boze reacties een gevoel van afwijzing opwekken, kunnen boze reacties er via dit mechanisme dus voor zorgen dat het afwijkende groepslid zich vervolgens conformeert. Er zijn echter ook situaties waarin conformiteit niet effectief is, of niet gewaardeerd wordt door de groep. Daarom voorspel ik dat er twee voorwaarden (moderatoren) zijn die bepalen of boze reacties tot conformiteit zullen leiden: (a) heracceptatie in de groep moet wenselijk zijn voor het afwijkende groepslid, en (b) conformiteit moet instrumenteel zijn (of als instrumenteel gezien worden) voor het uitlokken van heracceptatie. Heracceptatie is gewenst wanneer het afwijkende groepslid graag lid wil blijven van de groep, en wanneer heracceptatie ook echt nodig is om lid te kunnen blijven van de groep. Conformiteit is instrumenteel wanneer conformiteit een geschikte manier is om heracceptatie te verkrijgen. Dat is het geval als de situatie zó is gestructureerd dat de verandering in het gedrag van het afwijkende groepslid zichtbaar is voor de groep, en op conformiteit zal reageren met heracceptatie. In ieder van de drie empirische hoofdstukken in mijn proefschrift heb ik een deel van deze theorie onderzocht.

In Hoofdstuk 2 onderzocht ik het idee dat verschillende emotionele expressies verschillende niveaus van acceptatie of afwijzing signaleren. Om dit te onderzoeken heb ik in zes experimenten de impliciete associaties tussen verschillende emotionele gezichtsexpressies en verschillende conceptualisaties van acceptatie en afwijking

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gemeten. De resultaten lieten zien dat blijе gezichtsexpressies inderdaad sterker geassocieerd zijn met acceptatie dan andere gezichtsexpressies, en dat boze gezichtsexpressies sterker geassocieerd zijn met afwijzing dan andere (negatieve) gezichtsexpressies. Ook bleek dat deze associaties al optreden wanneer de gezichtsexpressies gedurende slechts 50ms getoond worden. Deze resultaten zijn dus in lijn met het idee dat blijе expressies worden geïnterpreteerd als signalen van acceptatie, en dat boze expressies worden geïnterpreteerd als signalen van afwijzing. Ook laten deze resultaten zien dat de associaties tussen emotionele expressies en verschillende niveaus van acceptatie niet simpelweg de positiviteit of negativiteit van de emotionele expressies volgen (boze expressies activeerden de afwijzing-gerelateerde concepten namelijk in sterkere mate dan andere negatieve emotionele expressies).

In Hoofdstuk 3 heb ik onderzocht hoe meerdere emotionele expressies gezamenlijk een afwijkend groepslid beïnvloeden. Een groep bestaat immers per definitie uit meerdere individuen, en andere groepsleden hoeven niet per sé unaniem te zijn in hun emotionele reactie op afwijkend gedrag. Wat gebeurt er bijvoorbeeld met het afwijkende groepslid in termen van afwijzing en conformiteit als slechts twee van de vier groepsleden boos reageren op afwijkend gedrag? Om dit te onderzoeken heb ik systematisch het aantal boze reacties op afwijkend gedrag gevarieerd, en gemeten in hoeverre het afwijkende groepslid zich afgewezen voelde en zich conformeerde. Studie 3.1 liet zien dat de relatie tussen het aantal boze reacties en ervaren afwijzing het best beschreven kan worden als een lineair, positief effect, en dat dit effect onafhankelijk is van het totale aantal groepsleden waaruit de meerderheid bestaat. Iedere extra boze reactie laat het afwijkende groepslid zich dus meer afgewezen voelen. In tegenstelling tot wat verwacht werd, bleek echter ook dat het afgewezen groepslid zich minder conformeerde naarmate het zich meer afgewezen voelde. In Studie 3.2 manipuleerde ik daarom of de respons van het afwijkende groepslid publiek of privé was (wat de instrumentaliteit van conformiteit beïnvloedt). Weer bleek dat het afwijkende groepslid zich meer afgewezen voelde naarmate meer groepsleden met boosheid reageerden. Hoewel de relatie tussen afwijzing en conformiteit zowel bij een publieke-, als bij een privé-respons negatief bleek te zijn, liet een nauwkeurige bestudering van de data zien dat deze negatieve relatie niet gevonden werd als proefpersonen zich minder anoniem voelden, en relatief minder afwijkend gedrag hadden vertoond. Daarmee bieden deze resultaten enige ondersteuning voor het idee dat zowel de instrumentaliteit van conformiteit, als de wenselijkheid van heracceptatie (een minder afwijkende positie betekent namelijk een grotere gelijkenis tussen het afwijkende groepslid en de groep; en gelijkenis veroorzaakt aantrekkingskracht) een rol spelen bij het bepalen of boze reacties tot conformiteit zullen leiden. Het belangrijkste inzicht uit Hoofdstuk 3 heeft echter betrekking op de numerieke relatie tussen boze reacties en ervaren afwijzing: Iedere boze reactie op afwijkend gedrag verhoogt de mate waarin een afwijkend groepslid zich afgewezen voelt.

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In Hoofdstuk 4 lag de focus op het onderzoeken van de rol van de instrumentaliteit van conformiteit en de wenselijkheid van heracceptatie als factoren die bepalen of (unanieme) boze reacties een afwijkend groepslid tot conformiteit zullen bewegen. In Studies 4.1 en 4.2 beeldden proefpersonen zich in dat de meerderheid in een groep emotioneel reageerde op hun afwijkende gedrag. In lijn met de resultaten van Hoofdstuk 2 en 3 bleek dat boze reacties tot meer waargenomen afwijzing leidden dan andere emotionele reacties, terwijl blij (enthousiaste) reacties de waargenomen afwijzing juist verminderden (d.w.z., de waargenomen acceptatie vergrootten). In Studie 4.2 bleek tevens dat als het afwijkende groepslid geen alternatief had voor de huidige groep (waardoor heracceptatie wenselijker wordt), boze reacties eerder tot conformiteit leidden dan wanneer lidmaatschap in een andere groep wél beschikbaar was. In Studie 4.3 onderzocht ik de relaties tussen emotionele reacties, waargenomen afwijzing, en de subjectief ervaren conformiteitsdruk (of groepsdruk) aan de hand van herinneringen die proefpersonen hadden aan situaties waarin ze een afwijkende positie in een groep hadden gehad. Het bleek dat sterkere boze reacties met meer, en sterkere blij reacties juist met minder waargenomen afwijzing geassocieerd waren. Belangrijker nog was dat de emotionele reacties van de andere groepsleden alleen in meer coöperatieve situaties (waarin conformiteit instrumenteler is, omdat conformiteit in coöperatieve situaties nuttiger is voor de groep en daardoor meer gewaardeerd wordt) gerelateerd waren aan de ervaren conformiteitsdruk: Sterkere boze reacties waren geassocieerd met meer conformiteitsdruk, en sterkere blij reacties waren juist geassocieerd met minder conformiteitsdruk. In Studie 4.4 onderzocht ik de effecten van emotionele reacties op conformiteit in daadwerkelijk interacterende groepen die bestonden uit drie proefpersonen. Steeds kregen twee van deze proefpersonen de instructie om boosheid, blijdschap, of juist geen emotie te tonen tijdens een groepstaak, en ik bekeek de invloed van deze emotionele uitingen op de derde proefpersoon in iedere groep. Het bleek dat proefpersonen die interacteerden met twee boze groepsleden relatief minder invloed hadden in de groepstaak dan andere proefpersonen, en dat dit kwam doordat deze proefpersonen zich meer afgewezen voelden. In Studie 4.5, ten slotte, gebruikte ik net als in Hoofdstuk 3 het paradigma van een gesimuleerde interactie. In deze studie bleek dat boze reacties en het daarop volgende gevoel van afwijzing eerder tot conformiteit leiden wanneer het afwijkende groepslid ook een perifeer groepslid is (voor wie heracceptatie wenselijker is), dan wanneer het gaat om een prototypisch groepslid. Bovendien bleek dat de mening van perifere groepsleden die geconfronteerd waren met boze reacties ook drie weken later nog altijd in lijn was met de groepsnorm. Daarmee ondersteunen de resultaten van dit hoofdstuk het idee dat boze reacties op afwijkend gedrag tot blijvende conformiteit kunnen leiden, mits (a) heracceptatie wenselijk is (Studies 4.2 en 4.5) en (b) conformiteit instrumenteel is voor het verkrijgen van heracceptatie (Studie 4.3).

Conclusie

De bevindingen in dit proefschrift laten zien dat de leden van een groep elkaar beïnvloeden via emotionele reacties op elkaars gedrag. Ook laat dit proefschrift zien dat er meer achter de emotionele reacties op afwijkend gedrag zit dan eerder gedacht werd: Deze emotionele reacties spelen een rol bij het reguleren van afwijkend gedrag in groepen. Meer specifiek blijken de meest beschreven reacties op afwijkend gedrag – boosheid en vijandigheid – functioneel te zijn, wat wil zeggen dat deze emotionele reacties, doordat ze een afwijkend groepslid ertoe kunnen bewegen zich te conformeren, bijdragen aan het oplossen van de problemen die afwijkend gedrag kan veroorzaken in een groep. Boze reacties blijken echter alleen functioneel te zijn als heracceptatie gewenst is, en als conformiteit instrumenteel is.

In Hoofdstuk 5 doe ik een voorstel voor een uitgebreider theoretisch model op basis van de bevindingen in mijn proefschrift, waarin emotionele reacties het gedrag van een afwijkend groepslid beïnvloeden via twee gelijktijdige motivationele processen, wraakgevoelens en (behoefte aan) affiliatie, die tegengestelde effecten hebben op conformiteit: Wraakgevoelens verlagen conformiteit, en affiliatie verhoogt conformiteit. De relatieve invloed van deze twee motieven wordt bepaald door de twee groepen moderators waarvan in dit proefschrift al is gebleken dat ze de kans op conformiteit na boze reacties verhogen: (a) de wenselijkheid van heracceptatie, en (b) de instrumentaliteit van conformiteit. Dit model levert drie nieuwe inzichten op: (i) boze en blij (enthousiaste) reacties hebben onafhankelijke en tegengestelde effecten op waargenomen afwijzing; (ii) wanneer conformiteit minder instrumenteel is, en heracceptatie minder aantrekkelijk is, zullen boze reacties tot minder conformiteit leiden dan blij reacties; (iii) zelfs als boze reacties conformiteit uitlokken, worden ook wraakgevoelens opgeroepen in het afwijkende groepslid. Dit heeft implicaties voor de effectiviteit van boze reacties in het afdwingen van conformiteit op de kortere en langere termijn. Het betekent bijvoorbeeld dat boze reacties tegelijkertijd kunnen leiden tot conformiteit en een verminderde waardering van de groep. Mogelijk kunnen boze reacties ook het gedrag in een andere context beïnvloeden doordat de wraakgevoelens zich uiten in vijandigheid jegens ongerelateerde mensen (verplaatste agressie).

Behalve het bieden van inzicht in de consequenties van emotionele reacties op afwijkend gedrag, heeft mijn proefschrift ook enkele meer algemene theoretische implicaties. Ten eerste blijkt de rol van emotionele expressies als sociale signalen belangrijker te zijn voor de sociale functionaliteit van emoties op het groepsniveau dan eerder werd aangenomen. De sociale functies van emoties op het groepsniveau worden vaak primair toegeschreven aan collectief emotioneel gedrag. Mijn proefschrift laat echter zien dat emoties ook via het signaleren van acceptatie of afwijzing een rol kunnen spelen in twee sociale functies van emoties op groepsniveau (het afbakenen van groepsgrenzen en het oplossen van groepsgerelateerde problemen). Door

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emotionele expressies te beschouwen als signalen van verschillende niveaus van acceptatie is het bovendien mogelijk tot meer specifieke voorspellingen te komen over hoe emotionele reacties het gedrag van een afwijkend groepslid kunnen beïnvloeden, en wanneer deze reacties dus functioneel kunnen zijn, dan door enkel te kijken naar collectief emotioneel gedrag.

Een tweede implicatie is dat boosheid een meer 'buitensluitende' emotie lijkt dan eerder werd aangenomen. Vaak wordt minachting beschouwd als de prototypische buitensluit-emotie, en wordt boosheid eerder gezien als een dwingende of agressieve emotie. Dit onderscheid is echter primair gebaseerd op verschillen in actietendensen tussen deze twee emoties, en dus op onderzoek op het intrapersonlijke niveau. Gegeven dat de meest consistente bevinding in dit proefschrift is dat boze reacties geassocieerd zijn aan, en leiden tot een gevoel van afwijzing, duidt dit er dus op dat vanuit een interpersoonlijk perspectief, boosheid ook een buitensluitende emotie kan zijn. Mogelijk hebben minachting en boosheid dus vergelijkbare interpersoonlijke consequenties.

Ten slotte is het mogelijk om te speculeren over de functies van blijdschap in groepen. Hoewel blij reacties geen korte-termijn verandering in het gedrag van afwijkende groepsleden veroorzaakten in dit proefschrift, is het wel mogelijk dat blij reacties, vanwege hun acceptatie-verhogende consequenties, gevolgen hebben op de langere termijn. Zo spelen blij reacties mogelijk een rol in het versterken van de band tussen de groep en het individu, bijvoorbeeld via het verhogen van de mate waarin het afwijkende groepslid zich identificeert met de groep. Op deze manier zouden blij reacties dus, op termijn, de wenselijkheid van heracceptatie kunnen vergroten, wat weer nodig is om te zorgen dat boze reacties functioneel zijn in het bijsturen van het gedrag van dit groepslid.

DANKWOORD

DANKWOORD

Dat dit proefschrift er zo uitziet als het er uitziet, is niet alleen mijn eigen verdienste. Ik wil daarom een dankrondje doen, dat begint bij de mensen die direct hebben bijgedragen aan de totstandkoming van dit proefschrift.

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Contributions

The following authors have contributed to the articles that comprise Chapters 2, 3 and 4:

Chapter 2

Heerdink, M. W., van Kleef, G. A., Homan, A. C., & Fischer, A. H. (2015). Emotional expressions as social signals of rejection and acceptance: Evidence from the Affect Misattribution Paradigm. *Journal of Experimental Social Psychology, 56*, 60–68. <http://doi.org/10.1016/j.jesp.2014.09.004>

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Chapter 3

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Chapter 4

Heerdink, M. W., van Kleef, G. A., Homan, A. C., & Fischer, A. H. (2013). On the social influence of emotions in groups: Interpersonal effects of anger and happiness on conformity versus deviance. *Journal of Personality and Social Psychology, 105*, 262–284. <http://doi.org/10.1037/a0033362>

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