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Conversational Flow

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Conversational Flow

The Emergence and Regulation of Solidarity
Through Social Interaction

Namkje Koudenburg

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 through social interaction

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Chapter one

Overview of the Thesis

Overview of the Thesis

Interaction plays an important role in the development of social relationships. Most research on interaction focuses on the role of *content* in developing shared realities and interpersonal relationships. In this thesis, we argue that people also obtain a sense of solidarity from the *form* of communication. This phenomenon has been the subject of my research during the past 4 years. The research began with a set of studies examining the consequences of brief silences during natural conversations. Although we were initially interested in the disruptions, as a result of our initial findings we became more interested in the phenomena that we observed in normal conversations: The consequences of conversational flow itself. And in the last stage of the research we began studying variations in the form of conversation. Although none of the later developments was initially anticipated, each individual step in the program of research was a natural consequence of the evolution of our thinking about conversations.

In the very final phase of this research we wrote a review article which intends to build a coherent theoretical argument to describe and explain the various findings. This retrospective overview is now the opening chapter of this thesis (Chapter 2). The reason for opening with this is that it gives readers the best understanding of our current (most up to date) thinking on the phenomena witnessed in our research. This review integrates our own empirical work, which is reported in more detail in the remainder of this thesis, with relevant literature in social psychology, sociology, and communication. The review suggests that that the form of communication plays an important and often underexposed role in both the *emergence* and the *regulation* of solidarity within small groups and dyads. Our main conclusion is that the form of conversation can be seen as an embodiment of a social system (a group or a relationship) and that the dynamics of this social system are indicative for the state of solidarity within it.

Following the structure of this review, the empirical research contained within the rest of the thesis has been structured in two parts. The first part comprises three chapters on the role of conversational form in the *emergence* of solidarity. The second part includes three chapters on how conversational form plays a role in the *regulation* of solidarity. In the final chapter, we test how form can play a role in maintaining solidarity beyond the context of conversations.

In the experiments reported in the empirical chapters of this thesis, we focused on conversational flow and flow disruptions. We used different paradigms, including written scenario's, videotaped conversations, actual conversations with confederates, audio mediated and video mediated communication. In these paradigms, we manipulated the disruption of conversational flow by introducing a brief silence, or, in the case of mediated communication, brief delays in audio-visual feedback such that participants heard (and saw) each other's contribution slightly later than intended. Furthermore, we tested our hypotheses in different samples: Among undergraduate students, online participants from different countries, shoppers in shopping malls or respondents contacted on the street in different cities in the Netherlands. One study examined processes of flow among singers, and one study examined professional and amateur actors. Studies in which participants took part in dyads included dyads with no prior acquaintance and peer students, but also participants who were in a romantic or different kind of relationship. Some of the studies were based on online questionnaires ($n = 2$), but the majority of the studies include either laboratory ($n = 11$) or field experiments ($n = 6$). Although each of these studies may have its shortcomings, the combination of studies provides a test of our hypotheses across a wide range of contexts and situations. This strengthens our belief that the findings will prove to be robust and generalizable.

Part One: The Emergence of Solidarity

In part one we describe a series of empirical studies that focus on the role of conversational form in the *emergence* of solidarity. In Chapter 3,

we examined the effects of brief silences in conversations within a small group of people. We predicted that silences (in comparison with conversations in which such silences do not occur) may signal problems in underlying relationships and consensus, and therefore lead to increased feelings of rejection and negative emotions, while decreasing feelings of belonging, self-esteem, control and social validation. These hypotheses are tested in a written scenario study ($n = 102$), and a study using videotaped conversations ($n = 60$).

In Chapter 4, we present three studies (total $n = 336$) that tested whether the effects of single silences (versus uninterrupted conversations with good flow) found in Chapter 3 reflect a more general consequence of the disruption of conversational flow. To this end, we manipulated the disruption of conversational flow more dynamically, by introducing a delay in the line when people communicated via mediated channels. Testing our hypotheses in the context of video-mediated communication allowed us to examine consequences in those conversations that are most likely to be susceptible to flow disruptions. Together, these studies represent our shifting interest in conversational flow and its consequences for emergent solidarity.

Chapter 5 further zooms in on the *qualities* of conversational flow that may explain its impact on solidarity. In particular, these studies focus on forms of communication that may provide a foundation for different kinds of emergent solidarity. In this chapter, we examined the hypothesis that a sense of solidarity can develop in the background of action that individuals perform together (e.g., as a consequence of having a conversation). To this end, we compared different forms of coaction and tested whether these led to different forms of solidarity. We predicted that uniform action leads to a sense of solidarity in which individuality is irrelevant, or even problematic. On the other hand, we expect that complementary action promotes a sense of solidarity that is similar in strength, but qualitatively different from the solidarity developed through uniform action. Here, we expected that rather than relying on similarities between group members, the personal value of each group member would become predictive of the experienced solidarity at the group level. The hypotheses were tested in five studies among online participants (Study 1, $n = 199$), among students in

laboratory experiments (Study 2, $n = 76$, and Study 5, $n = 150$) and among singers and actors in field experiments (Study 3, $n = 31$, Study 4, $n = 93$, respectively).

Together these chapters show that the form of communication conveys information about both the degree and the quality of solidarity that is being formed.

Part Two: The Regulation of Solidarity

In part two, we focus on the role of conversational form in conversations among people that have already established a sense of solidarity. Specifically, we examine how the form of conversation can function to regulate group processes, such as the maintenance of group norms, hierarchies and socially shared realities. These chapters also underline why it may be important to examine subtle aspects of conversation.

In Chapter 6 we examined how subtle conversational characteristics can function to regulate norms within groups. We specifically tested the effects of brief disruptions of conversational flow, by introducing silences in either videotaped ($n = 134$) or actual conversations ($n = 69$), just after a participant or a target person in the video had given his or her opinion. We expected that these subtle silences would signal a threat to the inclusionary status of group members, and therefore instigate conformity amongst group members who were highly motivated to belong to the group. That is, we expected group members with a high motive to belong to change their attitudes to become more in line with the group norm if their opinion expression received a silent response from the audience. In this way, we believe to have identified a subtle mechanism for norm regulation that can act complementary to explicit norm regulation. Explicit norm regulation (e.g. sanctions or punishments) tend to be costly and therefore less common. By contrast, brief pauses and hesitations in conversation are subtle but powerful cues, yet their material and social cost appears to be limited.

Chapter 7 focuses on the regulation of hierarchy within groups. We hypothesized that people experience the strongest sense of solidarity when the form of conversation reflects and respects the status structure within the group. We assumed that norms for communication depend upon one's status in the group. For instance, when a high status person speaks one is expected not to interrupt or talk back, whereas low status group members may expect some confirmation after they have spoken. In line with this, we expected that group members would interpret a disruption of conversational flow after they had spoken as either compromising or fortifying solidarity, depending on their status within the group. To test these predictions we manipulated status and flow disruption in two studies using videotaped conversations ($n = 138$) and actual conversations with confederates ($n = 77$).

In Chapter 8 we examined the effects of flow disruptions in conversations among intimates. Because intimates (lovers, family members, close friends) may sometimes have the feeling that they need no words to understand each other, we predicted that flow disruptions would affect these relationships quite differently compared with disruptions in conversations among strangers. In close relationships, we expected that flow disruptions would encourage partners to fall back upon the shared reality that they experienced among each other. When the viewpoints of the partner are difficult to access – as would be the case when flow was disrupted – there would be more room for interpretation, and thus more scope for the projection of one's own viewpoints. In strong and secure relationships, we therefore expected that flow disruptions would paradoxically foster a sense of social validation. In a correlational online study ($n = 273$) we examined the interpretations of flow disruptions among partners. Subsequently, we manipulated the disruption of conversational flow in a laboratory study among romantic partners ($n = 74$) and in a field study among people in different kinds of relationships ($n = 130$).

Together these chapters show that solidarity can be regulated and maintained by means of micro-processes that are concealed in the form of conversation. We identify three types of regulation in which the form of conversation plays a role: Norm regulation, the regulation of status relations, and the regulation of shared reality.

Beyond the context of conversation

In Chapter 9, we tested whether the form of communication would also play a role beyond the context of dialogue. Previous chapters examined the form of communication in dyads and small groups. We expected, however, that similar processes would also play a role in large groups, or even at the level of societies. In this chapter, we examined the role of silence during elections. In countries such as the Netherlands, where voting in elections is voluntary, a large segment of the population do not vote in elections and their views therefore remain unknown. This is a very particular form of silence, and one might wonder what meaning voters attribute to it. Extending the findings from Chapter 8, we expected that the “silence” of non-voters’ would provide voters with an increased scope for interpretation. We expected voters to use this scope to project their own viewpoints onto non-voters and therefore perceive non-voters as particularly likely to support their own party in the elections. In two field studies ($n = 158$ and $n = 414$, respectively), we compared voters’ estimates of their parties’ share of votes in two situations: The normal situation during the elections and the situation where everyone – including non-voters – would cast a vote. We hypothesized that the latter situation would lead to higher estimates of support for their party, especially among highly committed voters, as they would be highly motivated to maximize the support for their party in the elections. Results reveal that “silences” in the elections (in terms of non-voting) create increased scope for the projection of one’s own viewpoints on the population at large. These studies provide some initial evidence that the findings in the first two parts of the dissertation might prove to have societal relevance beyond the context of dialogue.

Additional remarks

Each chapter was written as an individual paper and may therefore contain some overlap in theoretical reasoning and methodology explained with the other chapters. Chapter 3, 4, 6, 7, and 9 have been accepted for publication (Koudenburg, Postmes, & Gordijn, 2011a; 2013a; 2013b; 2013c; 2011b, respectively), Chapter 5 and 8 are currently under review, and Chapter 2 will be submitted in the near

future. Furthermore, the research reported in this thesis has all been conducted in cooperation with others. Accordingly, the personal pronoun “we”, instead of “I” is being used throughout this thesis, because I express thoughts and ideas that were developed in collaboration with my co-authors.

Chapter two

The Role of Conversational Form in the Emergence and Regulation of Social Structure

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Abstract

Social interaction is central to the formation of social relationships and groups. Research examining this role has traditionally concentrated mainly on the content of interaction (e.g., the transfer of information). This literature review concludes that a sense of solidarity can also emerge from the act and art of conversing more or less independently of the content. Seemingly trivial aspects of the form of conversation (e.g., brief silences, smooth turn-taking) have a strong influence on the emergence and the regulation of solidarity. We suggest that this might be because the form of a conversation is an expression of the social structure of the group. Because of its dynamic nature, moreover, the form of conversation provides a continuous gauge of the evolvement of structural characteristics (e.g., hierarchy, social norms, & social reality) and plays an important role in their regulation.

The Role of Conversational Form in the Emergence and Regulation of Social Structure

A good conversation comprises more than the exchange of information. Imagine having a video call with a job applicant from overseas. The applicant has an excellent resume and during the interview, she answers all questions satisfactorily and seems friendly and respectful. But despite the high quality answers and her objective suitability for the job, you are unsure whether to hire her. During the interview, you do not have the feeling that you clicked: She seems a bit distant or aloof and does not seem very enthusiastic, as it takes her some time to respond – or laugh about your jokes. Also, there are some awkward silences. Altogether, the conversation leaves you with a vague sense that the applicant may not fit into the team very well and that she may be awkward to get along with. This could be because she is indeed difficult to work with, but it could also be simply because a lack of flow in the conversation has unconsciously created a barrier between you and the applicant. Rather than solely focusing on the content of the conversation, your judgment of whether the applicant fits your team may be influenced by the form of conversation: There may have been slight delays “on the line” obstructing the development of a close social connection. This role of conversational form in shaping solidarity is central to the current paper.

Social interactions like these are central to the formation of social relations (Gaertner & Schopler, 1998; Lewin, 1948). Indeed, traditional research established that the *frequency* and *content* of social interactions play a crucial role in establishing good social relations as well as shared understandings of reality (Gaertner & Schopler, 1998; Hardin & Conley, 2001; Kashima, Klein, & Clark, 2007; Lewin, 1948; Mead, 1934). Research on shared reality has for instance shown that people validate their viewpoints by exchanging information with others (Berger & Luckmann, 1971; Kashima et al., 2007). On the one hand, this process of *grounding* enables people to view the world as stable and predictable. But grounding serves a second function: It includes the

implicit notion that viewpoints are shared among a collective, and therefore points to the existence of a “we” (Kashima et al., 2007). Accordingly, social interaction plays a role in developing a sense of *we-ness* at the group level: People can induce a sense of social unity and shared identity through the bottom-up process of exchanging particular individual viewpoints (Jans, Postmes, & Van der Zee, 2011; Postmes, Haslam, & Swaab, 2005). In this process, the concepts of social unity (or entitativity), belongingness, and shared reality, although distinct in some sense, become closely intertwined. Theoretically, this sense of *we-ness* may be based on interdependence between actors or on self-categorisation and shared group membership. We shall use the term *solidarity* in this paper to refer to this sense of *we-ness*, thereby avoiding terms such as “entitativity” or “shared social identity” which come with particular theoretical baggage.

Perhaps it is due to the focus on the content of social interaction (what is being said both verbally and non-verbally) that certain aspects of the *form* of interaction tend to be overlooked. Other aspects of conversational form are, it seems, mere vehicles for the exchange of information. However, focusing on content or information exchange alone may lead to outcomes that are at times difficult to interpret. When going back to our example of the job interview, the content of the conversation and the non-verbal expressions during the interaction should have caused you to hire the applicant, as her answers were of high quality and she behaved normally. However, the form of the conversation may nevertheless lead to the opposite outcome: The disruptions in conversational flow elicited the feeling that the relationship between you and the applicant was somehow flawed, making her less likely to fit the team.

Indeed, a sizable literature suggests that the flow and form of communication *in itself* influences social processes. Beyond the content of what is being said and beyond non-verbal expressions that add to this content, people are often influenced by various other characteristics of a conversation, which inform speakers about the quality of social relationships. For instance, the literature on behavioural mimicry has shown that mimicking the poses or emotions of one’s interaction partner increases liking, affiliation, and empathic responses (Ashton-

James, Van Baaren, Chartrand, Decety, Karremans, 2007; Lakin & Chartrand, 2003; Stel, Van Baaren, & Vonk, 2008). Similarly, speaking at a similar pace or in a similar accent not only facilitates smooth interaction, but also communicates that actors belong to the same group (Giles & Coupland, 1991; Giles, Mulac, Bradac, & Johnson, 1987). Moreover, when a low status speaker interrupts a high status other, this is seen as rude and inappropriate, but when a high status speaker interrupts a group member of lower status, this can serve to maintain the mutually accepted status differences within the relationship (Ridgeway, Berger, & Smith, 1985). Although these findings come from different areas of social psychology, communication and sociology, they all point to the pivotal role of the *form* of communication in social processes.

In this literature review, our central research question is whether and how the form of conversations influences (a) the emergence and (b) the maintenance of solidarity. We are particularly interested in the development of solidarity through dialogue, and focus on small groups and dyads. In addition, we mainly focus on aspects of dialogue that influence the flow of a conversation, such as turn-taking, response latencies, and interruptions. The meaning of these aspects of conversational form can be interpreted more or less independently from the content of what is being said and the non-verbal expressions accompanying it. Moreover, these aspects are relevant in most forms of communication, including communication that occurs via mediated channels (e.g., telephone-calling, video-mediated communication, computer-mediated communication).

We review empirical findings mainly from the social psychological literature, but we integrate these with findings and theoretical perspectives from the sociological and communication literature, which examine the influence of the form of communication on the development of solidarity. Our central aim is to study whether micro-characteristics of the form of dialogue (e.g. silences, interruptions) influence processes at a more macro-level, such as the emergence and regulation of social structures.

The Emergence of Solidarity

Before examining the development of solidarity within small groups and dyads, it is important to first define solidarity. The Oxford English Dictionary refers to solidarity as “The fact or quality, on the part of communities etc., of being perfectly united or at one in some respect, especially in interests, sympathies, or aspirations.” In early theorizing on the concept, Emile Durkheim (1893/1984) uses the term social solidarity to describe the nature of the bonds by which societies are tied together. Later descriptions by Leach et al., (2008, p. 147) suggested that solidarity should be associated with “a sense of belonging, psychological attachment to a group, and coordination with other group members”. The different notions of solidarity thus reveal several aspects of solidarity: The sense that there is an experience of *unity* within the group and the sense that one *belongs to* or *identifies with* the group.

In order to explain how solidarity emerges within small groups, different theories have been developed, which can be broadly categorized into two streams (see Postmes, Haslam et al., 2005). First, there are theories that focus on bottom-up processes by which interdependence and interpersonal interactions may foster the development of solidarity (e.g., Gaertner & Schopler, 1998; Lewin, 1948). For example, classic theories of group formation (e.g., Lewin, 1948) suggested that the essence of a group lies in the interdependence between its members. People become connected because they complement each other and fulfil each other’s needs. Interpersonal contact increases interdependence as well as attraction between group members, and therefore fosters group formation (Gaertner & Schopler, 1998; Lott & Lott, 1965).

But beyond interdependence, group members also need a shared understanding and shared language. Through communication, group members develop a socially shared understanding of the world around them, a process called *grounding* (Clark, 1996; Kashima et al., 2007). For instance, when people find themselves in a train that is delayed, they will try to make sense of the situation. By communicating to other passengers, they will develop a common understanding of the situation

which may vary from “there must have been an accident” to “the railway company is unreliable”. The establishment of such common ground provides people with a feeling of social validation (Festinger, 1950; Echterhoff, Higgins, & Levine, 2009; Hardin & Higgins, 1996). Moreover, this process of grounding implies that knowledge is shared among a group of people, and hence encompasses the suggestion that a collective “we” exists (Clark, 1996; Kashima et al., 2007). In two ways then, through the establishment of interdependence and the emergence of shared meaning, can interaction foster the development of solidarity.

Second, there are theories that focus on top-down processes (e.g., Turner, 1985). An example of this is self-categorisation theory (SCT: Turner, 1982; 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), which proposes that people are most likely to self-categorise as group members when differences within the group are smaller than differences between groups. According to SCT, individuals tend to perceive themselves in terms of a shared stereotype that defines the ingroup in contrast to relevant outgroups (e.g., Hogg & Turner, 1987). Group members can thus develop a sense of solidarity on the basis of their shared attributes. Think for instance about meeting someone from your home country when travelling abroad. It is quite likely that you will feel a sense of solidarity: Even though you have not met this person before, you know that he or she is “one of us”. In groups that are formed through these deductive processes, similarities between members become a defining feature of group membership and form the basis of solidarity. Importantly, rich or intensive social interaction is not required for such forms of solidarity to emerge: As long as norms and attributes of the groups to which people may belong are known, mere knowledge of category membership should be sufficient to make social identities salient (Lea, Spears, & Watt, 2007; Spears, Postmes, Lea, & Wolbert, 2002).

These theories about inductive and deductive pathways to group formation have hitherto been applied mainly to studying and understanding *explicit* social processes of influence (e.g., through the content of interaction or through category activation) that underpin a group’s formation. Thus, there are many instances in which people engage in explicit comparison of their own opinion with those of others

(e.g., Sherif, 1935), or categorize others into ingroup or outgroup by labelling them “one of us” or “one of them” (e.g., Tajfel, Billig, Bundy, & Flament, 1971). In dialogue, however, people are also informed about the level of solidarity through the *form* of interaction. At such occasions, people may acquire a sense of solidarity merely from the subjective experience of conversing with others, independently of the content of such interaction. This suggests that subtle processes within the form of social interactions are likely to play an important role in the development of social structures, i.e. through the emergence of solidarity. Unfortunately, research on the emergence of groups has often focused on explicit utility and meaning functions of social interaction, and largely ignored the role of conversational form. As a result, the literature on group formation is lacking a coherent conceptual framework to explain how feelings of solidarity can arise from the *form* of conversation alone. However, various studies in social psychology, sociology, and communication allow us to construct a more coherent and integrated perspective in order to account for this tacit emergence and maintenance of social structures.

The form of communication

The majority of studies on the form of communication focus on *non-verbal* signals such as facial expression or posture in communication. There is a broad range of evidence for the importance of these signals to the communication of hierarchy and affiliation. For instance, research has shown that expansive and open postures communicate that a person is high in power, whereas contractive, closed postures are mostly displayed by those low in power (Carney, Hall, & Smith LeBeau, 2005). Similarly, during a job interview, nodding, smiling and leaning forward increases a person’s chance of being selected (Gifford, Ng, & Wilkinson, 1985). Moreover, mimicking facial expressions, behaviours or posture has been associated with increased liking, pro-social behaviour and a sense of togetherness (Chartrand & Bargh, 1999; LaFrance & Broadbent, 1976; Van Baaren, Holland, Kawakami, & Van Knippenberg, 2004).

These examples all refer to non-verbal communication, but similar effects can be found in the literature on *verbal* communication: Here, form can similarly inform speakers about underlying relationships. For instance, research in the communication accommodation tradition (Giles & Coupland, 1991; Giles et al., 1987) has shown that people adjust their speech rate (Street, 1984; Webb, 1970), pause and utterance duration (Jaffe & Feldstein, 1970) and language (Giles, Taylor, & Bourhis, 1973) to their communication partner. Not only does such accommodation promote conversational flow and foster understanding between interaction partners, it can also be used to reveal that actors belong to the same group and therefore communicates a need for social integration (Giles & Coupland, 1991).

Research on both verbal and non-verbal communication thus suggests that the form of communication has a communicative function in and of itself. Indeed, theorizing by Bernieri and Rosenthal (1991) suggested that people engage in different efforts to coordinate their interaction, and that these efforts not only serve conversational flow, but also signal that the group is an entitative unit. They suggested that some aspects of this coordination relate to similarity of behaviour, such as behavioural matching or simultaneous movement. We refer to these acts as synchrony.¹ Another aspect of coordination relies on the capability to smoothly integrate the different activities of speakers so that the total product of a group's actions can become more than the sum of its parts—this is called behavioural meshing. Both synchrony and meshing rely to some extent on the third ingredient of acting to a common rhythm, which plays a role in enabling both simultaneous movement and the successful integration of distinct inputs to a common product.

In much of the research that has followed up on the consequences of rhythmic co-action, the emphasis has been on synchrony and in particular on the *physical* coordination of actions. Consequently, the

¹ In the work of Bernieri and Rosenthal (1991), the term *interactional synchrony* is used differently, to describe simultaneous movement, behavioural meshing, and rhythm altogether. However, in later work, the use of the term *synchrony* is mainly used to describe concurrent or simultaneous activity in a more narrow sense. In the present paper, the term *synchrony* refers to this more narrow definition of simultaneous movement or speech.

entrainment of physical movement into exact simultaneous action became the typical way to operationalize coordination. In research by Marsh, Richardson, and Schmidt (2009) for instance, individuals were asked to entrain their movements while rocking chairs side by side, or while swinging pendulums. In other studies participants were asked to watch interactions between individuals who moved in, or slightly out of sync, and to indicate their perceived entitativity afterwards (Lakens, 2010). The research using these paradigms suggested that synchronous movement promotes perceptions of group entitativity and interpersonal liking (Bernieri, Gillis, Davis, & Grahe, 1996; Lakens, 2010). In addition to increased perceptions of entitativity, Marsh et al.'s (2009) study showed that participants who were facilitated to rock in sync displayed a greater sense of team-ness in an upcoming task, suggesting that group level solidarity can arise when individuals perform the same actions together.

A normal conversation however, as Bernieri and Rosenthal suggested, involves more than acting in synchrony. The nature of synchronous forms of interaction (in the sense of concurrent activity) implies that all group members must be engaged in identical acts in order to perform well at it. It thus seems plausible that it would be the underlying similarity of action that forms the basis for the emergence of social unity. But, when people converse, their actions may be attuned to a very different choreography than when speech is exactly synchronous: They must coordinate their speech by taking turns and thereby complementing each other's actions. Thus, although it is quite likely that the smooth coordination of turns in conversations can similarly serve as a signal of solidarity, the nature of that solidarity should be qualitatively different. Whereas both activities require a rhythmic coordination of behaviours, turn-taking does not require people to act in ways that are exactly simultaneous. Rather, a sense of solidarity may develop through the successful integration of distinct individual inputs.

There is indeed some research pointing to the rhythmic underpinnings of smooth turn-taking. Research in pragmatics has proposed several mechanisms that enable a smooth coordination of speech acts (Goffman, 1967; Schegloff, 2007). One first observation is that turn-taking is a cooperative act: A speaker signals whether they

want to keep the floor or are about to end their turn with cues such as changing pitch, stretching out the last word or syllable, or gazing at the listener (Duncan, 1972; Kendon, 1967). But over the course of a longer conversation, speakers also coordinate the smooth transition of speaking turns by finding a common rhythm (Bernieri & Rosenthal, 1991; Clark, 2002). It has been proposed that people have an oscillator mechanism, which allows them to organize their turn taking in a way that creates a smooth flow of speech (Wilson & Wilson, 2005). Others suggest that acting together requires a shared representation of the own and other person's actions, allowing speakers to accurately predict each other's actions (Sebanz & Knoblich, 2009; Gambi & Pickering, 2011). As a result, speakers have the technical capacity to coordinate their speech with extreme temporal precision, which makes pauses between speaking turns often last no longer than two tenths of a second (Jefferson, 1973; 1986). In sum, although most conversations have no fixed rhythm in the same way that synchronous actions do, a smoothly flowing conversation has a more fluid rhythmic oscillation that requires acts that are minutely timed to the actions of the other. In that sense, although the forms of interaction clearly differ, both require a close coordination of actions in time.

It should come as no surprise then that, like acting in synchrony, the successful coordination of speech may have a powerful communicative function that is independent of content. Beňuš, Gravano, and Hirschberg (2011) evaluated the role of single word grounding responses (such as *yeah*, *mhmm*, and *okay*) and conversational fillers (e.g., *um* and *uh*) in dialogue. They concluded that these words often serve temporal alignment of turn initiations. In their observation, short latencies between turns signalled a greater understanding between communicators and therefore contributed to the establishment of common ground. In line with this, other work has shown that turn-initiations that overlap the preceding turn or start long after the turn is finished decreases the trustworthiness of the speaker (Brennan & Williams, 1995).

In contrast to the positive effects of conversational flow, one can thus infer that a *lack* of flow may negatively affect social outcomes. For instance, a lack of flow may influence person perception, perceptions of

the quality of the underlying relationship, mutual trust and perceived mutual understanding. In the job interview example at the beginning of the paper, a lack of flow within the conversation may have led one to question underlying relationships. It is possible that a delay in the Internet connection elicited feelings of disconnection not only in the literal, but also in the symbolic sense: The disruption of conversational flow raised questions about the level of consensus and the quality of underlying relationships. Similarly, in face-to-face conversations a person may experience a higher sense of solidarity when having a smooth conversation at a party compared to when having an effortful conversation with a shy colleague. This suggests that people may not only perceive solidarity in synchronous action, but also in the smooth alternation of speaking turns.

In three experimental studies, we tested the idea that the smooth coordination of speaking turns could induce a sense of solidarity, whereas a disruption of flow would not do so (Koudenburg et al., 2013a, *Chapter 4*). In these studies, previously unacquainted participants came into the lab individually, where they were placed into separate cubicles. They were given headsets and instructed to talk for five minutes about their favourite holiday destinations with a participant on the other side of the line. The topic was chosen because most people find it engaging and can keep up an animated conversation about it without much effort. In half of the conversations, a short delay of 1 second was introduced after two and a half minutes of conversing normally. This brief delay then continued for the remaining two and a half minutes of conversation. Such a short delay may not be noticed consciously by participants, but it still is quite disruptive and effectively reduces the flow of the conversation because it makes smooth turn-taking impossible: Participants start interrupting each other, and experience short silences in the conversation (see also Pearson et al., 2008). It is quite important to point out that in these studies, the participants started the conversation in the normal way. Only the second half of the conversation was complicated by the delay: Participants thus experienced a loss of flow. In a questionnaire after the conversation, participants in the delay condition reported substantially lower levels of entitativity, lower feelings of belonging and slightly lower levels of shared cognition compared with the participants for whom the

conversation occurred in normal time. Interestingly, these results were independent of the content of conversation.

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These studies show quite clearly that people are informed about the solidarity within a group not just by what is said, but also by how it is being said. When conversation occurs in a smooth and efficient way, this is accompanied by feelings that suggest that “things are all-right”: people perceive a good connection and consensus within the dyad. More specifically, although we found no evidence that there were any between-condition differences in objective agreement prior to the conversation, the smooth interplay of taking turns elicited a *feeling* of consensus (Koudenburg et al., 2013a, *Chapter 4*). The ability to coordinate speech in a harmonious way may thus serve as a proxy for more deep-seated harmony within the dyad—pointing to the establishment of perceived common ground or a sense of shared reality. Not only did participants perceive to be on the same wavelength, they were also more likely to perceive the dyad as a coherent social unit, and experience a sense of belonging to this dyad: In all studies, these were strong and consistent effects. When the coordination was disrupted halfway through however, people started questioning the level of solidarity and consensus within the dyad. These studies indicate that brief delays of seemingly trivial duration can have a quite a strong influence on important social outcomes, such as the emergence of solidarity and a sense of shared reality.

For us, the interest of these studies lies not just in the “experimental” condition in which the flow is disrupted, but also in the “control” condition in which flow is undisrupted. The findings inform us about a powerful and effective pathway to establishing social solidarity. Quite strong feelings of solidarity may emerge as a consequence of relatively trivial conversations with a total stranger about holiday destinations. Given the restrictions that we created in the experimental settings we can be reasonably sure that a lot of this solidarity emerges from the bottom up: The combination of distinct individual inputs within a conversation with good flow—a relatively effortless investment—creates a meaningful impression that there is a social entity of “us” in which all of us have a stake.

Of course, this ability to regulate the flow of interactions is but one of many aspects of the form that interaction may take. In particular, the conversation is a setting in which the individual contributor is able (and expected) to have a major contribution: Actors take turns. However, there are also situations in which individual inputs are much less discernible in the process of group formation. When acting in synchrony for instance (e.g., a group of soldiers marching, a group of protesters chanting, a group of believers praying), the social entity of “us” emerges through the similarity and simultaneity of group members’ coordinated actions and can therefore be threatened, rather than strengthened, by individual distinctiveness. This suggests that different forms of coordination may lead to qualitatively different forms of solidarity.

Comparing different pathways to solidarity

The distinction between synchronous and alternating interaction shows some conceptual parallels to the distinction that has been made in the explicit pathways to group formation (Postmes, Haslam et al., 2005; Postmes, Spears, Lee, & Novak, 2005). In the theorizing by Postmes and colleagues, a socially shared identity is either deduced from a superordinate social identity (inferred for example from inter-group comparisons), or induced from the combination of individual contributions to the group. A deductively formed social identity is traditionally anchored in group attributes that can be immediately inferred by individual group members based on (for example) shared stereotypes of a common outgroup: inter-group comparisons may foster the formation of a self-stereotype (e.g., Turner et al., 1987). But the need for inter-group comparisons is not self-evident: Perceptual unity of an ingroup can also be inferred from its gestalt-like distinctiveness from a “background” in which another group is not necessarily the referent (Gaertner, Iuzzini, Guerrero Witt, & Oriña, 2006; Turner et al., 1987). Extending this principle, properties of the shared social identity can also be inferred from the homogeneous simultaneous action of ingroup members. This resonates with Durkheim’s (1893/1984) *mechanical solidarity*, which he associated with indigenous tribes who used rhythmic co-action to increase and express group unity.

Durkheim distinguished this kind of solidarity from a solidarity that was based on more *organic* principles: Here individual complementarity serves as the basis for group formation and the individuality of group members becomes an important consideration in group functioning. The concept of organic solidarity can be related to contemporary research showing that interpersonal interaction is also a major predictor of feelings of unity and solidarity (Gaertner et al., 2006; Gaertner & Schopler, 1998; Koudenburg, Postmes, & Gordijn, 2011; 2013a; 2013b, *Chapter 3, 4, 7*; Lickel et al., 2000; Prentice, Miller, & Lightdale, 1994). This can also be conceptualized as a bottom-up process in which a common sense of identity is *induced* from group members' individual contributions to the group (Postmes, Haslam et al., 2005; Postmes, Spears et al., 2005; see also Swaab, Postmes, Van Beest, & Spears, 2007). In these groups, members also engage in co-action, but their actions are based on complementary or alternating actions (and thus remain distinguished), rather than actions performed simultaneously (which are more indistinguishable or non-differentiated).

In a recent set of studies, we examined rhythmic coordination of verbal communication. As in physical action, different forms of coordination may be witnessed in speech: Sometimes, people engage in synchronous speech – for instance when praying or when chanting at a protest meeting. At other times people will engage in complementary interaction, for instance when taking turns in a conversation. We compared the act of turn taking with speaking in synchrony in 5 studies (Koudenburg, Postmes, & Gordijn, 2013b, *Chapter 5*). The main focus of these studies was to examine the consequences of both types of coordination for establishing a sense of solidarity. Specifically, we were interested in the effects of coordinating verbal interaction independently of the content of this interaction (which were kept constant across conditions).

For example, in Study 4, 93 actors were allocated to triads and asked to recite a poem either synchronously or by taking turns. In the control condition, participants recited the poem without coordinating with the other participants. Results showed that people who had a coordinated interaction (either in synchrony or by taking turns) experienced more

solidarity than participants who interacted without coordination between speakers. Importantly however, the kind of solidarity that was experienced in both coordination conditions was qualitatively different, depending on how people interacted (i.e., reciting the poem in synchrony or by taking turns). In the turn-taking condition participants felt an *increased* sense of personal value to the group. Moreover, we found that the experience of solidarity during such complementary action was statistically mediated by the sense that individuals were personally valuable to the group (and in one study by the sense that other group members were personally valuable, too). Thus, individuality appears to be central to the organically emerging sense of solidarity. In the synchrony condition, by contrast, where speech was fully synchronized, there was strong solidarity but the experience of personal value to the group did not play any role in its emergence. We can thus conclude that although different forms of social interaction foster solidarity, the nature of this solidarity very much depends on the form of co-action that is displayed: Solidarity based on similarity of action facilitates categorisation by relegating individual group members' inputs to the background (cf. Turner, 1982; 1985; Postmes, Spears, & Lea, 1998, Tanis & Postmes, 2008). By contrast, in a conversation that consists of a dynamic interplay of speaking turns, the combined input of individuals determines what it means to be "us".

Across the set of five studies, we attempted to show that these effects were not beholden to actors reading a poem. Similar effects were found when undergraduate students performed these actions. We conducted one study in which rhythm was cued by means of a karaoke-type setup which dictated speech rate. And finally, we conducted one study with singers. Although so far we have not extended this line of research to consider physical movement or completely different task types, we believe it would be worthwhile to attempt extending this finding to other settings.

Integration of findings: How solidarity emerges from the form of conversations

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In sum, these findings suggest that a conversation constitutes much more than the words that are spoken and meanings that are exchanged. Aspects of communication that at first sight may seem trivial, such as brief interruptions, the use of filler words, or silences, appear to play an important role in maintaining conversational flow. The flow of a conversation, in turn, conveys information about both the degree and the nature of solidarity that is being achieved in the conversation. This affects various outcomes. First, in conversations with a good flow, people experience higher levels of belonging in the dual sense of feeling attached to, and being accepted by other group members. Second, a smoothly flowing conversation leads to an increased sense of understanding and social validation, suggesting that the flow of the conversation serves as a proxy for agreement between the members. Third, the effects of conversational flow reach beyond the level of interpersonal relations (i.e. the level of “me” and “you”), and affect the emergence of social unity at the group level (i.e. the level of “we”).

Putting all of these observations together, it is worth pausing to ask what can account for these effects. One possibility is that smooth interaction fosters the development of closer interpersonal relationships, and that these interdependencies between group members define the level of unity within the group (Lewin, 1948; Gaertner & Schopler, 1998). Another possibility is that the convergence of speech that facilitates conversational flow signals that speakers belong to the same category and thus share a common identity (Giles & Coupland, 1991; Giles et al., 1973; 1987). But there is also another possibility which gets away from the idea that the first step in group formation would be occurring at the inter-personal level, and that also gets away from the idea that group formation is based on some pre-existing shared category or common knowledge.

We believe that it is also possible that group members observe the conversation and its dynamic evolvment. The form of this conversation can then be seen as a physical manifestation of the group or dyad “in action”. This is, in other words, real feedback about the state of affairs among us. In a way, one might say that the conversation thus *embodies*

the group as a social system. Through the dynamic interplay between speakers a social body emerges that goes beyond the interpersonal level to level of the group or dyad. This system is regulated through a complex set of behavioural skills that enables people to coordinate their speech in a smoothly flowing manner. One could compare this to a situation in which people are dancing together. By paying close attention to the partner's moves, well-versed dancers are able to coordinate their moves in a smooth and harmonious manner, leading them to feel perfectly at one with each other. Although dancers are not likely to be consciously aware of every step they take, missing a beat may seriously disrupt the dancing flow and as such, threaten to undermine the particular form of social unity that dancing together expresses. Similarly, in conversations, a disruption of the flow is likely to be interpreted as a signal that there may be some problem at the social level. A minor delay in the connection during video-mediated communication can thus elicit a feeling of doubt or unease about the social relations. While the source of such disruption may remain unclear, the level of solidarity within the social system can no longer be effectively expressed. The conversation no longer embodies that "we are on the same wavelength" and that "I belong to this group".

Now that it is clear that conversational form may play an important role in the emergence of social structures, it becomes feasible to ask what role conversational form plays in the regulation of these structures once groups or social relationships have been established.

The Maintenance and Regulation of Solidarity

Most communication occurs between individuals that have established some form of social relationship or common group membership (e.g., in a group of friends, among acquaintances, at work, etc.). In such groups, structure is for instance provided by social norms that guide the behaviour and attitudes of members (Sherif, 1966; Turner, 1982), and more broadly by universal norms that are necessary for a cooperative conversation to be possible in the first place (Grice, 1975). Moreover, social structures often have a status hierarchy, which

similarly provides a framework for communication within the group (e.g., Berger, Connor, & Fisek, 1974; Goffman, 1974; Ridgeway et al., 1985). A third aspect of social structures is that they presuppose a commonly shared reality, which provides group members with a common view of the world around them and more generally enables communication between group members (Echterhoff et al., 2009; Kashima et al., 2007). Social norms, status hierarchies and shared realities, when taken together, become core characteristics that “define” the group, in the sense that they are affirmed through group members’ actions towards each other. Thus, each of these aspects of social structure can be recognized within the communication between members.

Together, these structural factors provide a framework that gives a group stability over time, among others by structuring and influencing group members’ actions. In communication for instance, social norms inform us that interrupting others is rude or inappropriate, and awareness of the hierarchy within the group informs us about whom we should be listening to most (and interrupting the least). In a well-executed conversation, the group members’ actions towards each other reflect the social structures that exist within the group. This dynamic is experienced as smooth and pleasant: Contributions to the conversation mesh well and turn-taking is uninterrupted and seemingly effortless. Behaviour that deviates from this framework poses a potential threat to the stability of the social system. Indeed, when a group member of low status interrupts a high status other, this may threaten assumptions of group hierarchy and thus threaten or call in doubt the solidarity. Because disruptions of the normal flow of the conversation may signal that something within the social system is wrong, this should normally (i.e., when the continuation of those systems is valued) elicit behaviour that is aimed at re-establishing unity. That is, solidarity may be maintained by sanctioning deviants, or alternatively by more subtle cues in communication that inform people about the status of the relationship between speakers.

We suggest that relatively subtle variations in the form of conversations can be enlisted to regulate three aspects of social structure. We further suggest that these subtle tactics may be quite

effective and powerful. First, norm regulation occurs through subtle cues in the form of conversation which suggest that the solidarity within a group is under threat, and therefore instigate behaviour aimed at re-establishing solidarity (e.g. conformity to group norms). Second, in order to maintain a certain hierarchy within the group, differences in status should be acknowledged within the form of conversation. Third, the form of conversation plays a role in maintaining previously established shared realities.

Structural factor 1: The regulation of social norms

Social norms are generally accepted prescriptions that guide beliefs and behaviours within a certain group (cf. Morris 1956). For example, in one group it may be normative to greet each other with a hug or kiss, whereas in other groups a handshake or even a simple nod will suffice. Similarly, whereas you may openly despise of meat eaters in a group of vegetarian friends, you are probably inhibited to express such strong opinions among the family members of your friend, whose mother has just spent hours cooking a meat dish. On the one hand, norms can be seen as merely practical guidelines for behaviour, on the other hand they can encompass important information on the group's identity (Turner, 1982). Therefore, in order to ensure the continuity of groups, it is important that group norms are maintained and regulated.

Research on the regulation of group norms has traditionally focused on explicit forms of social control (e.g., Axelrod, 1986; Fehr & Gächter, 2000; Festinger, 1950; Horne, 2001a; Moscovici, 1991). Here, in order to maintain compliance with group norms, it is suggested that group members apply sanctions to those who deviate from group norms. These sanctions may include the denial of positive outcomes, derogation of the deviants, or exclusion from the group (Eidelman, Silvia, & Biernat, 2006; Marques & Paez, 1994; Schachter, 1951). Most empirical findings are based on explicit operationalisations of sanctioning, such as the allocation or deduction of points in a game paradigm, or the quite extreme measure of how much hot sauce is given to a deviant (e.g., Axelrod, 1986; McGregor et al., 1998).

In sociological theory (e.g., Axelrod, 1986; Horne, 2001a), sanctioning is understood as a costly process; those who sanction risk losing important relationships and risk retaliation by the deviant. It may be for that reason that in many public settings, sanctioning appears to be quite rare. In an experiment by Milgram and colleagues (Milgram, Liberty, Toledo, & Wackenhut, 1986), confederates were instructed to cut into waiting lines throughout New York City. Milgram's aim was to examine responses to norm deviance. However, it appeared that in only 32 % of the cases, people explicitly objected to the intrusion. In the majority of the cases, intruders were just given a dirty look or received no visible or audible sanction at all. Of the 514 people who occupied the 2nd, 3rd or 4th position behind the intruder, only 54 people objected (10.5 %).

A similar process can be observed in group conversations. Here, norm deviant or extreme opinions may elicit correcting remarks by other group members (Feldman, 1984) or lead to a discussion in which group norms are re-negotiated (Festinger & Thibaut, 1951; Smith & Postmes, 2011). But quite often a deviant utterance in conversation elicits less explicit responses from the audience: People may remain silent while searching for an appropriate response, or try to avoid discussion by introducing a new topic. Despite the apparent rarity of explicit norm regulation, people nevertheless do adhere to group norms. This suggests that norm regulation may take place at a more subtle level.

Indeed, research on the *establishment* of group norms reveals that members are often informed about group norms vicariously, through observing the behaviour of others (e.g., Bandura, 1977; Cialdini, 2001). By interacting with others, exposing one's ideas to those of others and being exposed, people establish a common ground which provides them with a sense of validation (Clark, 1996; Echterhoff et al., 2009; Kashima et al., 2007; see also Asch, 1952, pp. 170-181; Festinger, 1954). But although this subjective experience of grounding can be informed by processes of opinion comparison, our earlier research suggested that people can obtain a similar sense of validation merely through the flow of the conversation: Having a smooth and effortless conversation implies that people are on the same wavelength (Koudenburg et al.,

2013a, *Chapter 4*). This suggests that people may be able to infer implicit group norms through the form of interaction.

We tested this hypothesis by examining participants' responses when their expressed opinions elicited a brief silence in a peer audience (Koudenburg et al., 2011a, *Chapter 3*). Previous research on ostracism revealed that a prolonged silence is experienced as a socially threatening form of exclusion (Williams, 2001). Our studies were set up to examine whether brief disruptions of conversational flow would have similar effects. Participants watched a video in which they were asked to imagine being one of the actors. In a conversation with two peer students, this actor stated her disapproval about intimate relationships between teachers and students. The video was edited in such a way that in the one condition, the conversation smoothly continued on the topic, without reference to the statement of the actor, whereas in the silence condition, the other students responded with a brief four-second silence after the statement, after which they continued in a similar way as in the no-silence condition.² The results showed that participants felt that consensus within the group decreased after the occurrence of a silence, and accordingly, felt less socially validated. Moreover, after the silence participants reported increased feelings of rejection. Importantly, these findings point to the possibility that the form of conversation plays a role in the communication of group norms. Indeed, the effects could logically result from participants' feeling that they had breached a group norm, and were rejected as a result.

This suggests that people are quite sensitive for cues in their environment that may signal social exclusion. Pickett, Gardner, and Knowles (2004) similarly proposed that people have a sensitive system, which helps them monitor their inclusionary status within the group. When people's inclusionary status is being threatened, they are more likely to pay attention to social cues in their environment. For instance, people who have been ostracized have a better memory for socially relevant information than those who have not been previously

² In a base rate condition, participants received a script of the video, without any information about the fluency of the conversation. The results in this condition resembled those in the flow condition, suggesting that without information about the fluency in the conversation, people assume that there is flow.

ostracized (Gardner, Pickett, & Brewer, 2000). In addition, people are better able to distinguish between genuine and deceptive smiles after they have been rejected (Bernstein et al., 2008). Moreover, people with a dispositionally high motivation to belong are better able to identify facial expressions and vocal tones (Pickett et al., 2004). It is suggested that this increased sensitivity serves to re-establish connection with others (Bernstein et al., 2010; Pickett et al., 2004). One way of re-establishing this connection, would be to conform to group norms.

In follow up research, we therefore examined the consequences of subtle conversational cues – like silences – for norm regulation (Koudenburg et al., 2013c, *Chapter 6*). In a way, a silence can be seen as an extremely persuasive signal: One cannot argue or reason with a sanction or warning that remains tacit. Moreover, because of the collective nature of the silence – a silence only occurs when all members of the group remain silent – the actor may feel like being collectively disapproved. Conversational form may thus function as an instrument to withhold validation and prevent grounding and could therefore be seen as a subtle method of sanctioning.

In the same paradigm as described before, we asked participants after watching the conversation about their attitudes on intimate relationships between teachers and students. It appeared that participants who had watched the video in which a silence occurred, reported more normative attitudes regarding these relationships than those who had watched the uninterrupted conversation. Thus, the silence signalled that an implicit group norm (being liberal about relationships between teachers and students) had been breached, and as a result, participants shifted their attitudes to be more in line with this norm. This effect however only occurred for participants who were highly motivated to belong, suggesting that conformity to the inferred group norm occurred in an effort to re-establish ones inclusionary status within the group. In line with this reasoning, participants high in motivation to belong felt more threatened by the silence than those with a low motivation to belong.

In a second study testing the same hypothesis, student participants expressed their own attitudes in a conversation with confederates. The topic of the conversation was the discrimination of smokers on the

waiting list for donor organs. After participants had expressed their opinion on the topic, confederates either smoothly continued the conversation on policies regarding smokers in different countries (no-silence condition) or they remained silent for 4 seconds, after which they continued the conversation in a similar way (silence condition). Importantly, in neither of the conditions did the confederates directly reveal their attitude on the topic. Participants' attitudes regarding discriminatory policies were measured before and after the conversation. A pilot test had revealed that students perceived the group norm to be slightly in favour of discriminating policies against smokers in organ donation. The results of the study showed that for participants who were highly motivated to belong to the group, a silent response of the audience after they had expressed their attitudes instigated a shift of these attitudes to be more in line with the group norm. Interestingly, we found that also students who had a low motivation to belong to the group shifted their attitudes when these elicited a silent response from the audience. However, they changed their views in the opposite direction, that is, contrary to the group norm. Possibly, the silence marked their distinctiveness from the group, and motivated them to move even further away from the group norm (cf. Postmes, Spears, Sakhel, & De Groot, 2001). We again found that the implicit threat to one's inclusion within the group motivates people to conform to group norms.

Together, these studies point to the existence of a mechanism for regulating and maintaining solidarity, complementary to that of explicit sanctioning. By subtly changing the form of an interaction in some unexpected way, one may make deviants aware of their transgression by subtly signalling the ever-present threat of reduced popularity or even expulsion from the group. Group members are highly sensitive to these cues, and are therefore likely to respond to these signals with behaviour that increases their likelihood of reconnection, for example by displaying attitude conformity (Koudenburg et al., 2013c, *Chapter 6*). Thus, subtle cues in the form of conversation inform speakers of the status of social relations within the group. To the extent that group members perceive those relations to be in danger, they are likely to act in ways that restore those relations or otherwise maintain the unity within the group. But in addition to solidarity, a group has other

characteristics such as an internal hierarchy that may also need to be preserved. Does conversational form also help achieve this?

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Structural factor 2: The maintenance of hierarchy

A second characteristic of social structures is that in addition to some overarching sense of solidarity or unity, there typically exists some division of labour coupled with an internal status hierarchy among group members (Bales, 1950; Homans, 1950). Although relationships among friends may be fairly equal, in families or work relations, status and power tend to be less equally distributed. The influence of status in communication has been a subject of study for a long time, and research shows that this influence can hardly be underestimated. One's status within the group affects both verbal and non-verbal communication. For instance, when participants are led to believe that they are higher in task expertise (a status characteristic), they are likely to respond before their partners on problem-solving trials (Conner, 1977). Similarly, different patterns of eye gaze have been identified between low and high status speakers in the group (Dovidio & Ellyson, 1982; Ellyson et al., 1980), and efforts to accommodate others are typically performed by low status group members (Giles & Powesland, 1975; Gregory & Webster, 1996). The form of conversation thus conveys information about the structure of relationships, suggesting that hierarchy provides a framework for communication within the group.

Indeed, research suggests that people have different norms regarding communication with higher or lower status others (Ridgeway et al., 1985). People from lower status groups (i.e., women, compared to men) have been found to use more deferential speech forms (Lakoff, 1975). For example, the use of hedges, disclaimers, and tag questions that characterize a deferential style are especially common when women speak with higher status individuals (i.e., men; Carli, 1990). Similarly, research shows that interruptions are relatively rare in a same-sex context, but that men are likely to interrupt women in mixed sex contexts (Zimmerman & West, 1975). This suggests that these speech characteristics are a function of status differentials, rather than a structural sex difference.

Accordingly, research suggests that a deferential or dominant conversational style can be instigated by creating status differences within groups. In an elaborate study, Leffler, Gillespie, and Conaty (1982) examined the effect of status on vocal interruptions, laughter, the proportion of mutual space occupied, and intrusive behaviour such as touching and pointing at the other. They assigned participants to high status positions (teachers) or low status positions (student) and found that the teachers claimed more space with their bodies, talked more, and attempted more interruptions than students. Moreover, they found that men in their study displayed more nonverbal behaviours that were related to high status than females did: They took more space, pointed to possessions more often, touched more frequently and laughed less.

Expectation states theory (Berger et al., 1974) postulates that inequalities in task-oriented groups are due to the different performance expectations that members hold for themselves and others, based on external status differences (e.g., as derived from group memberships). They argue that people's position in a group not only determines their communication style, but that this style of communication also serves to *maintain* the inequality within the group. In support of this argument, research shows that speakers gain power by interrupting others (Ng, Bell, & Brooke, 1993), and that the degree of participation within a conversation predicts one's status position at a later stage (Willard & Strodbeck, 1972). In addition, people use gaze patterns to acquire status in initially equal interactions (Dovidio & Ellyson, 1982). For instance, the first to break eye contact is likely to lose status, as breaking eye-contact is a non-verbal sign of deference or submission (Argyle, 1967). Berger and colleagues (1974) suggest that the development of different communication styles can be guided by people's expectations regarding the behaviour of people of different status. Because performance expectations influence observable displays of power and status behaviours, they often work as self-fulfilling prophecies maintaining status differences within the group (Ridgeway et al., 1985; Ridgeway & Smith-Lovin, 1999).

Thus, expectancies regarding status-relevant behaviour provide a framework for defining and shaping interpersonal interaction (e.g., Fiske, 2004; Goffman, 1974). From studies on language we learned that

the violation of expectancies threatens the coherence within a group (Grice, 1975; Ohlschlegel & Piontkowski, 1997). Accordingly, we could infer that adherence to norms regarding status-relevant conversational patterns serves to maintain a stable hierarchical structure within the group. To maintain solidarity, communicational patterns should be in line with the existing status positions within the group.

In two studies we tested whether status-congruent communication patterns could foster a sense of solidarity (Koudenburg, Postmes, & Gordijn, 2014a, *Chapter 7*). We suggested that whereas high status group members are likely to be approached with respect based on their position within the group (e.g., listen to what the teacher says, don't talk back), group members with a lower status may feel respected mainly because they are included in the conversation (e.g., Huo et al., 2001). Such different norms may cause the same conversational patterns to be interpreted differently, depending on one's status within the group. A brief silence after a high status person has spoken, for instance, is likely to be interpreted as an appropriate reflection of one's standing, whereas a brief silence that occurs after a low status person has spoken may arouse feelings of rejection. Indeed, our research showed that participants who were given a high status in the group – for instance by receiving false feedback about their own task expertise compared to that of others – interpreted a silent response from the audience after they had spoken as less threatening to the unity within the group, than did those who had a low status in the group. For high status group members, a silence may thus be a sign that their distinct position in the group is recognized, and therefore affirms the solidarity within the group. Low status group members, however, felt especially respected when their contribution did not disrupt the flow of the conversation, and perceived solidarity to be strongest when turn-taking occurred unintermittedly. We interpreted these findings as showing that the recognition of status differentials within the form of communication forges a sense of solidarity.

Sociologists have obtained similar findings when studying interaction rituals in speed dating (McFarland, Jurafsky, & Rawlings, 2013). In a study including audiotapes of approximately 1100 four-minute speed dates, they examined the role of conversational

characteristics in participants' feelings of connection (i.e., by asking them to report how well they clicked with their dating partner). McFarland and colleagues regarded the heterosexual speed dates as having asymmetrical power relationships, in which women had somewhat of an upper hand. This was based on the idea that women are significantly more selective than men in whom they would like to date and the sense of connection that they experience, which gives them the power to decide whether there will be a second date (see also Finkel & Eastwick, 2009). The results revealed that characteristics of speech explained 7.5% of the variance in having a sense of connection, after modelling effects of the partners' traits. When the empowered individual was the focus of the conversation, dating partners experienced the highest sense of connection. Thus, when men reinforced this focus and aligned with their female partners by accommodating her and mirroring her laughter or language use, both dating partners were likely to regard the date as a success. Together, these studies suggest that feelings of solidarity emerge when conversational form reflects and respects the hierarchical structure within a group or dyad.

Structural factor 3: The maintenance of shared reality

In parallel to the hierarchical structures and social norms, the establishment of a shared reality is an important aspect of relationships (Berger & Kellner, 1964; Clark, 1996; Echterhoff et al., 2009; Kashima et al., 2007). Through the process of grounding, people form commonly shared beliefs about the world around them. Previous studies showed that the flow of a conversation often serves as a proxy for agreement, and thus suggests that the form of communication can serve grounding processes (Koudenburg et al., 2011a, 2013a; *Chapter 3, 4*). This raises the question whether conversational form also plays a role in maintaining already established socially shared realities.

Similar to the findings regarding status relationships, expectations or a priori beliefs about the relationship play a crucial role here: The same conversational patterns can be interpreted differently when occurring in conversations between strangers, compared to when occurring in a

conversation between intimates. A brief conversational silence, for instance, may be threatening when it occurs in a conversation between previously unacquainted individuals, but is unlikely to be interpreted as similarly threatening (or even noticed) by those who feel they know each other completely. To the contrary, intimates may often feel that no words are needed in order to understand each other, and interpret a silence in terms of their perceived shared reality: As a sign of social validation.

Indeed, once a common ground is established, it colours the interpretation of other people's behaviour or expressions, which is likely to lead to an overestimation of attitude similarity (Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002; Sillars, 1985). In a recent set of studies, we examined how the form of conversation can function to maintain this shared reality. To this end, we tested the effects of disruptions of flow in conversations between intimates (Koudenburg, Gordijn, & Postmes, 2014b, *Chapter 8*). In Study 1, we examined people's agreement with statements in which flow disruptions were regarded negatively: "When my partner and I are quiet for a moment, we often have a different view on the subject," and with statements in which flow disruptions were regarded positively: "When my partner briefly remains silent after I said something, I feel reaffirmed". Correlational evidence showed that participants who perceived their relationship as stable were less likely to agree with the negative interpretations of flow disruptions. For the positive interpretation of flow disruptions no such direct link was found. However, an indirect effect indicated that relationship stability increased the experience of a socially shared identity, which in turn increased participants' perceptions of flow disruptions as validating.

To further examine how disruptions of flow are experienced in intimate relations, we set up two experiments using conversations between intimates (Koudenburg et al., 2014b, *Chapter 8*, Study 2 & 3). We manipulated whether or not flow was disrupted by introducing a delay in auditory or audio-visual feedback, which continued throughout the second half of the conversation (for a similar manipulation, see Koudenburg et al., 2013a, *Chapter 4*). Results revealed a paradoxical effect: When partners experienced their relationship to be less stable or

less strong, no effect of flow disruption was found.³ However, when partners experienced their relationship to be stable or strong, the disruption of flow led to an *increased* sense of social validation. Rather than posing a threat to the relationship, as found in research among strangers (Koudenburg et al., 2011a, 2013a, 2013c, *Chapter 3, 4, 6*), the disruption was interpreted in terms of the shared reality that partners had developed within their relationship. In a sense, the lack of communication provided partners with extra scope to interpret their partner's opinion to their advantage. Thus, when actual information about the partner's viewpoints is difficult to access, people are likely to fall back upon the ideas about their relationship and the shared reality that exists in that relationship. As a result, they overestimate their partner's support and feel strengthened in their viewpoints (see Koudenburg, Postmes, & Gordijn, 2011b, *Chapter 9*, for a similar effect in a different context).

These findings are in line with research findings in the literature on intergroup processes (Pearson et al., 2008). Pearson and colleagues asked participants to have a conversation about the war in Iraq or the 2004 presidential election with either ingroup or outgroup members (Whites vs. Blacks and Latino's). The conversation occurred through audio-visual communication. Throughout the 6-min conversation, auditory and visual feedback was either delayed for 1s, or occurred in real time. Results revealed that in intergroup conversation, a delay instigated higher levels of anxiety and decreased interest in the conversation. However, in intragroup conversations a delay did not influence participants' interest in the communication and participants even reported marginally decreased levels of anxiety compared to the control condition.

Together, these studies suggest that the availability of a commonly shared identity or reality can help to overcome the negative effects of flow disruptions. Whereas in conversations among strangers or outgroup members disruptions of flow raise questions and instigate

³ On average, the participants in these studies perceived their relationships as very strong and stable. Participants who scored 1 SD below the mean still perceived their relationship to be well above the midpoint of the 7-point scale. It is possible that this explains why flow disruptions were not perceived negatively among these participants.

anxiety, among members who share group membership the same disruptions are less anxiety provoking. Moreover, if an established relationship between speakers is experienced as very strong and stable, the shared identity can even provide a resource through which lacking or disruptive communication fosters a sense of shared reality.

Conversational Form as the Representation of Social Structure

Our central question in this review was whether micro-characteristics of the form of dialogue (e.g. silences, interruptions) influence processes at a more macro-level, such as the emergence and regulation of social structures. More specifically, we sought to answer questions of how the form of conversations influences how people develop social ties and gain a sense of belonging. In addition, we were interested in how people acquire a sense of grounding, or validation: What makes people believe that their opinions are shared, valid or true? The second aim was to examine how conversational form influences regulation once such solidarity between people is established. What causes people to adjust their opinions to the group norm? How do people maintain a certain position in a group once a hierarchy has been developed? What processes play a role in maintaining a commonly shared reality within close relationships?

One would expect that developing or changing these social structures requires the use of power, coercion, sanctioning, the transfer of information, or other forms of explicit social influence. Our results, however, suggest that an additional process may play a role. We show that solidarity may also result from subtle cues in the form of communication: A brief silence, a slight delay, a minimal overlap in speech. These micro-characteristics of communication form have profound consequences for the emergence of solidarity at a group level. In the studies reviewed here, attitude conformity is not a result of explicit social pressure or commands, but rather a function of subtle social cues that alert people to the possibility of having breached a group norm. A sense of shared reality does not just develop from a process of active opinion comparison and discussion, but also emerges

from the subjective experience of having a smoothly flowing conversation, which carries the implicit notion that people are on the same wavelength. Hierarchy is not just maintained by explicit exertion of control or the expression of status, but is much more likely to be displayed in subtle conversational patterns, which allow high status group members somewhat more speaking time than members with low status in the group.

How is it possible that these micro-characteristics of speech have such a substantial influence on the degree to which social structures of group unity and shared reality emerge, over the course of a brief conversation? Why would these seemingly trivial aspects of dialogue affect these profoundly important social outcomes and processes? We propose that this is because the form of communication is, in itself, taken as a visible expression of the social structure: The conversation embodies the group, in other words. When people engage in a conversation, the coordinated speech acts together form a representation of the social relations among those in the social interaction (cf. Fiske, 2004). For instance, a smoothly flowing conversation is likely to represent a relation in which levels of solidarity are high, and people are likely to be on the same wavelength. In contrast, a highly disruptive and effortful conversation may indicate low levels of solidarity between people. Thus, the dynamics of the conversation are a physical representation of the state of solidarity within a group or dyad.

Not only do these communication dynamics inform people about the *level* of solidarity, they may also contain information about the *nature* of this solidarity. Indeed, coordination can take on different forms, which result in different forms of solidarity. For instance, when individuals speak in synchrony, they are likely to develop a mechanical form of solidarity: People feel connected through their shared characteristics that inform them about who they are in relation to another individual or as a group member. In contrast, complementary principles of coaction, such as taking turns in a conversation, are more likely to induce a form of solidarity that is organic in nature and relies on the personal value of each individual in a dyad or a group. It appears that solidarity emerges in the background of the focal activity that people perform. Thus, rather

than being a mere vehicle for the content of interaction, the form of dialogue appears to be a manifestation of the relationship between people.

The idea that different relationships can be manifested in people's behaviour shows resemblance with Fiske's *Relational Models Theory* (RMT; 2004). Fiske suggests that people use different relational models to structure their behaviour towards each other. One of these models is *communal sharing*, in which the focus is on what people have in common (e.g., through family-ties, acting in synchrony). Another way to structure interactions is by the *equality matching*-model, in which people use additive imbalances as a framework (e.g., by returning favours, taking turns in a conversation). According to RMT, the equality matching principle is based on interdependencies and results in fragile bonds: When complementary needs can be satisfied in another way (or by another person), there is no reason to remain connected. Our studies however suggest that turn-taking creates a solidarity that is at least as strong as the solidarity that results from acting in synchrony (Koudenburg et al., 2013b, *Chapter 5*). Moreover, our data suggests that through the dynamic interplay between speakers a solidarity emerges that goes beyond mutual obligations on the interpersonal level, but enhances a sense of we-ness at the group level (Koudenburg et al., 2013a, *Chapter 4*).

The second conclusion that we draw on the basis of this review is that, once established, solidarity can be regulated and maintained through the form of communication. We examined three aspects of social structure: Social norms, hierarchy, and shared reality, and discussed how the form of communication plays a role in the regulation of these aspects. We were particularly interested in people's responses to threats to the social system. Disruptions in the form of conversation can signal a potential threat to the unity in the dyad or of the group, for instance by challenging the existing status relations.

Indeed, with regard to norm regulation, we showed that disruptions of conversational flow alert people to threats to the solidarity within a social system, and therefore instigate behaviour that is aimed at re-establishing social connection, that is, conforming to group norms. Conversational characteristics thus serve a signalling function: A

breakdown of conversational flow is perceived as a signal to problems in the relationships or consensus within a social system. Conversational form may therefore function as an instrument to withhold validation and prevent grounding, and as such be a subtle method for sanctioning deviants and regulating norms.

In a similar way, conversational form may function to regulate status relations. Here, signals may take on different forms for speakers of different status, because expectations and interpretations of conversational patterns depend upon one's status within the social structure. Whereas a brief silence after a high status person has spoken may mean that this person is appropriately being listened to and thus be an appropriate reflection of this person's respected position, a similar silence after a low status person has spoken may signal that this person is being ignored or excluded. By adhering to the norms for hierarchical communication (i.e., don't talk back after a high status person has spoken), social structures can be reinforced through the form of conversation.

Finally, the experience of common ground can colour the perception of conversational characteristics, and in this way strengthen a sense of shared reality. Although conversational dynamics that impede the flow of information threaten communication between outgroup members or strangers, for people who share a strong sense of identity, the lack of access to each other's viewpoints may in fact lead to an overestimation of the consensus between them, and foster a sense of validation. Thus, through the form of interaction, social structures can be regulated in terms of norms, status relations and shared reality.

In sum, the form of conversation influences solidarity at the level of the group or dyad. Through dynamic processes of interaction, a framework is developed, which informs people about the status and nature of their relationships and guides the interpretation of future interaction. When the solidarity is threatened by undesirable dynamics within the form of communication, this instigates processes that operate to protect the system. In this way, the form of conversation functions to maintain social norms, hierarchies, and shared realities within a social system.

Implications for Research

two

The present review suggests that solidarity within dyads and groups can emerge from, and be regulated through micro-characteristics in the form of conversation. What are the implications of these findings for future research?

Implicit versus explicit processes

One of the characteristics of the form of communication compared to its content is that it appears to occur at a more implicit level. Subtle irregularities in conversational form are not often consciously noticed by people. Indeed, in both the study by Pearson et al. (2008), and our own studies on delays in audio-visual communication (Koudenburg et al., 2013a, *Chapter 4*), most participants did not notice that the connection was delayed. Despite their apparent unawareness of these cues in both these sets of studies, the deterioration of conversational flow did affect feelings of solidarity. But even when people do notice conversational cues, they are often unaware of the *influence* of these cues on their perceptions or behaviour. Remarkably indeed, even when we made participants in our experiment aware of the poor connection (Koudenburg et al., 2013a, *Chapter 4*, Study 2, Study 3), they were still not able to correct for the feeling that solidarity with their interaction partner had decreased.

It is likely that people who *perform* certain conversational acts are similarly unaware of their behaviour, or its influence in the development of solidarity (at least most of the time). A silence, for instance, has been shown to result from many different causes: One can actively reject someone (e.g., Williams, 2001), but also, one can have difficulty processing what has been said or be pondering what to say next (Johannesen, 1974; Jaworski, 1993; Tannen, 1993). Despite the diverging causes on the part of the sender, the silence is often quite unequivocally perceived as a rejection (Pomerantz, 1984; Koudenburg et al., 2011a, *Chapter 3*). Accordingly, the sociologist Pettit (1993) has suggested that norm regulation may occur as a side-effect of naturally

occurring behaviour of group members, rather than as a result of intentional sanctioning that is imposed upon deviants. Whereas a norm deviation may be received in silence just because the audience is unsure how to respond, the receiver is likely to feel threatened and respond with conformity as a result. In this way, subtle and implicit conversational signals could serve norm regulation (Koudenburg et al., 2013c, *Chapter 6*). In this review we focused on the effects of conversational form, rather than the production of it. Further research is needed to establish the extent to which conversational form is influenced intentionally.

When comparing explicit and implicit forms of maintaining solidarity, several differences between the two emerge. First, implicit forms of rejection (e.g., ignoring someone) motivate behaviour aimed at establishing reconnection, whereas explicit forms of rejection often cause the target to withdraw from social contact (Molden et al., 2009). A reason for this may be that implicit forms of rejecting or status-enhancing behaviours are more likely to preserve the relationship. In the case of brief interruptions or pauses, the ambiguity of the signal makes it unlikely that someone is called upon his actions. Communication thus occurs in a way, off-record: The behaviour cannot be attributed to one clear communicative intention, and thus offers the actor the ability to deny any intent to exclude someone or to be presumptuous (Brown & Levinson, 1987).

Moreover, influence of implicit nature makes people unable to fight against it: Even when making people aware of the form of conversation, they appear to be unable to correct for its influence as they are often unaware of the effects of these subtle characteristics on their feelings (Koudenburg et al., 2013a, *Chapter 4*). Important to take into account here is that in natural interactions subtle conversational cues may be quite commonplace, whereas the explicit regulation of group norms (e.g., group discussion, sanctioning of deviants) that has hitherto received more research attention (e.g., Axelrod 1986; Horne 2001) is not as common. Thus, there is a real potential for subtle signals to have the stronger social effects overall.

Individual versus group levels of analysis

two

The current review reveals the influence of interpersonal action on dynamics at the collective level (the level of the group or dyad). Most research on the form of conversation focuses on the effects of speech cues and coordination on social relationships in the interpersonal plane (me and you). For instance, research showed that convergence of speech rate and response latency leads to increased liking (Street, 1984), a brief conversational silence instigates feelings of rejection (Koudenburg et al., 2011a), and interruptions can increase the status of the interrupter with regard to the person who is interrupted (Ng et al., 1993). The present review shows that conversational form has consequences beyond the level of “you” and “me”, and engenders a sense of solidarity at the level of “we” or “us”. For example, a smooth interplay of speaking turns at the interpersonal level increases solidarity at the collective level (Koudenburg et al., 2013a, *Chapter 4*). Moreover, interactional dynamics that respect the status relations within the group are likely to foster perceptions of group entitativity (Koudenburg et al., 2014a, *Chapter 7*). We suggest that this is because dynamics in the form of conversation influence the solidarity at the level of the group or the collective. Social systems at this level have their own structural characteristics such as social norms, hierarchy and a shared reality. These characteristics do not exist at the individual level, but become relevant when individuals interact with one another. Through the form of communication, each individual can influence the social system to a greater or lesser extent (e.g., by accommodating the other speaker) but the organization of a conversation depends upon the successful coordination of the speakers together.

Beyond the context of dialogue

The present review focused on form of interaction in the specific context of a dialogue. It would be interesting to examine the influence of form beyond the context of a spoken conversation. What meaning do people assign to the time it takes others to reply to an email? How do people experience solidarity when others conceal their opinions in a group, or, on a societal level; when others do not vote during the

elections? Would this be interpreted as validating and thus strengthen the solidarity, or would it be experienced as a threat to one's viewpoints? Although the research on this topic is very scarce at this moment, there are some studies which suggest that this may be a potentially fruitful avenue for future research. For instance, Kalman and Rafaeli (2011) examined managers' evaluations of job candidates who either replied to an email after 1 day, 2 weeks, or remained silent for more than a month. Results revealed that response latencies influenced the managers' evaluation of the applicants in terms of credibility, trust and affiliation. The research suggests that the form of online communication conveys important social information, which in the case of unexpected response latencies may have hampered the development of solidarity.

In another area, research suggests that the form of interaction can also enhance perceptions of solidarity. We examined voters' perceptions of non-voters, who can be seen as remaining silent during the elections (Koudenburg et al., 2011b, *Chapter 9*). Here, the form played an important role as well: It appeared that without any information given on the reasons why others did not come to the polls, voters included non-voters in their grassroots support. As such, the silence of non-voters provided voters with scope for interpretation, which caused them to overestimate the support for their party. In this way, the form of communication (e.g., silence) could serve grounding processes and thus lead to validation of one's viewpoints.

Implications for Practice

The processes discussed in this review suggest an immediate practical relevance for a broad range of face-to-face settings in which maintenance of a good relationship or achievement of a high level of solidarity would appear to be beneficial. More concretely, we believe that it is important to focus on the *form* of interactions in various settings ranging from intimate relationships, through work settings and education to clinical settings. If the practical impact of disrupted flow is indeed substantial, as we suspect it is, it might be advisable in the future to include the topic of conversational form more explicitly in social skills

training of professionals such as doctors, teachers, and clinical psychologists. When preparing for job interviews, candidates may want to consider training skills that enable them to have a smoothly flowing conversation: Skills that go beyond providing the correct answers to the questions. But even on a more elementary level of schooling, pupils may benefit not just from tuition in rhetoric and debate, but from widespread conversation classes in one's own language: Such classes may help people to establish and maintain healthy relationships later on in life.

In addition to emphasizing the potential importance of conversational form in everyday face-to-face conversations, the conclusions of this review also have implications for communication that is mediated by technology. In mediated communication, such as video-conferencing or even old-fashioned telephone calls, conversational dynamics are highly susceptible to disruptions of flow. Delays in the connection frequently occur, and often cause interactions to run less smoothly by increasing the number of interruptions and pauses. The present review reveals that these changing dynamics in conversational coordination influence the degree to which communicators experience a sense of solidarity.

Although these processes can occur in both face-to-face and mediated communication, the latter form of communication is more likely to be influenced by disturbances outside of the communicators' control. Research by Rutter and Stephenson (1977) has shown that when conversational flow is disrupted by various types of speech disturbances (interruptions, simultaneous speech, and pauses), communicators are likely to maintain a high level of non-verbal coordination (e.g., through coordinating their body movements). Thus, the coordination of body movements may obviate the deterioration of verbal coordination. In mediated communication however, such obviation may not be effective or even impossible, because conversation either occurs via audio channels only, or, in the case of video-mediated communication, the visual feedback is likely to be disturbed as well. In a way, the introduction of new forms of "high-bandwidth" social interaction (e.g., desktop video conferencing) may ironically hamper the ability to establish particular kinds of social relations, because people

expect coordination to be no different than in face-to-face conversation. Conversations can thus end up feeling “bad” for reasons that speakers do not understand. Here, technology may subtly undermine the development of solidarity.

The conclusions also have implications for communication between members of different cultural backgrounds. Different norms about communication can lead to difficulties in speech coordination. Whereas pausing may be a normative behaviour in some cultures, other cultures may perceive such pauses as withholding or hostile because they disrupt conversational flow (Sajavaara & Lehtonen, 1997; Tannen, 2000). Different expectations may trouble the coordination of speech, and consequently undermine the solidarity that is experienced in such interactions.

Conclusion

On the basis of this literature review, we conclude that sociality can emerge from the act and art of conversing, relatively independently of the content of this interaction. A brief silence or interruption that may seem trivial when approaching a conversation as a mere transfer of information, appears to play a pivotal role in the emergence and the regulation of solidarity. We suggest that the form of such conversations represent the level and quality of solidarity among group members. It informs people about status relations within the group, and more generally about the nature of relationships within the group. In addition, because of its dynamic nature, the form of a conversation provides a continuous gauge of whether good relationships, and their associated social norms, hierarchies and social realities, are being established, threatened, changed, or confirmed.

Chapter three

Disrupting the Flow:
How Brief Silences in Group
Conversations Affect Social Needs

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Abstract

We all know the awkward feeling when a conversation is disrupted by a brief silence. This paper studies why such moments can be unsettling. We suggest that silences are particularly disturbing if they disrupt the conversational flow. In two experiments we examined the effects of a single brief instance of silence on social needs, perceived consensus, emotions, and rejection. Study 1 demonstrated that fluent conversations are associated with feelings of belonging, self-esteem, and social validation. If a brief silence disrupts this fluency, negative emotions and feelings of rejection arise. Study 2 replicated these effects in a more realistic setting, and showed that the effects of a brief silence are considerable despite participants' unawareness of the silence. Together, results show that conversational flow induces a sense of belonging and positive self-esteem. Moreover, this research suggests an implicit route to social validation, in which consensus is inferred from fluent group conversation.

Disrupting the flow: How brief silences in group conversations affect social needs.

three

Sometimes there is a brief pause in a conversation, just after we have said something. We experience prolonged silences as *deadly* or *ear-splitting*. But even brief silences are unsettling. Why is this so? We suggest that silences threaten social needs. This hypothesis is derived from research in pragmatics, showing that disfluency in conversations may signal conflict, and the ostracism literature, which demonstrates that being ignored harms social needs.

Conversational Flow and Social Needs

Conversations are more than mere exchanges of information: The social dynamic of a conversation can be compared to other cooperative social activities. When dancing together, the coordinated movements of two partners may arouse a variety of positive emotions (Haidt, Seder, & Kesebir, 2008). A fluent conversation, although different in many respects, shares these characteristics of close coordination and predictability, because of the harmonious exchange of information through smooth turn-taking (Chapple, 1970). Another similarity is that this experience of conversational flow is associated with a pleasant state of contentment (Burgoon, Stern, & Dillman, 1995).

The positive experience of conversational flow may serve four different social needs. First, the pragmatics literature demonstrates that numerous interactions with a partner increase conversational flow and interpersonal bonding (Rabinowitz, 2008). Furthermore, people synchronize their behaviors in interactions (Marsh, Richardson, Baron, & Schmidt, 2006), which increases feelings of entitativity and rapport (Bernieri, Davis, Rosenthal, & Knee; 1994; Lakens, 2010). This suggests that conversational flow could increase people's sense of belonging.

Fluency generally indicates a positive state of affairs and is thereby related to positive affect (Winkielman, Schwarz, Fazendeiro, & Reber, 2003). Similarly, synchronous interaction induces a positive state (Cappella, 1990) and decreases the chance of a breakdown or “awkward silence” (Burgoon & Saine, 1978), suggesting that fluency gives interaction partners a sense of control over the communication. Accordingly, we expect fluent conversations to serve two different needs: the need for self-esteem and the need for control.

Finally, research shows that talking in unison or completing each other’s talk induces a sense of consensus (Edwards & Middleton, 1986). This is probably a largely unconscious process in which the absence of a need for systematic information processing leads to the heuristic inference of consensus—harmony as a proxy for agreement. Moreover, Smith and Postmes (2011) show that consensual group interaction produces a sense of social validation. Thus, we predict that conversational flow could increase perceived consensus and social validation.

Taken together, we expect that conversational flow implicitly fosters feelings of belonging, social validation, control, and self-esteem. However, conversational flow can be disrupted by a brief silence. As we expect conversational flow to satisfy social needs, we expect that disrupting it will threaten these needs.

Disrupting Conversational Flow

Research on Italian melodrama suggests that silences are often used to signal non-compliance or confrontation, and are also known as disaffiliative disfluencies (Piazza, 2006). Although this research confirms that disruptions of conversational flow can undermine feelings of social cohesion, the question remains why they may threaten social needs and signal negative events such as conflict? One explanation stems from the ostracism literature.

The ostracism literature suggests that silence can be a way of socially excluding people, and that this negatively affects emotions and social

needs (e.g., Williams & Zadro, 2001; Williams; 2001). The present studies do not investigate this so-called silent treatment: in our studies nobody is actually excluded. However, the notion that people are, due to the evolutionary importance of group membership, highly sensitive to perceiving exclusion is relevant to our research. This may explain why people are susceptible even to very minor disruptions in conversational flow. That is, conversational silences negatively affect emotions and threaten needs because they could signal social rejection.

The Present Research

Two studies examined the psychological effects of conversational flow by comparing it to conversations that were briefly interrupted by a silence. We tested two hypotheses. First, conversational flow is associated with positive feelings of belonging, control, self-esteem, social validation, and perceived consensus. Second, disruptions instigate feelings of rejection and negatively affect emotions.

Study 1

Participants read a scenario in which a fluent conversation was either disrupted by a silent moment (disrupted flow condition) or was not disrupted (flow condition). The silence occurred after a speaker (with whom the participant was asked to identify) made a mildly controversial statement. The statement was chosen such that participants could feel validated in their opinions by the positive feelings induced by the conversational flow. In contrast, if there was no flow, there could be legitimate doubts about the level of consensus in the group, reducing validation and increasing feelings of rejection.

Methods

Participants and design. Participants (102 undergraduates, 57 female) were randomly assigned to one of two conditions (flow vs. disrupted flow).

Procedure. Participants were instructed to imagine being the narrator when reading a scenario. In the scenario, the narrator had a conversation with two fellow students, in which he or she made a mildly controversial statement, (i.e., “I think obese people should pay for two seats in the bus”). In the flow condition one of the fellow students smoothly continued the conversation on the previous topic making no further reference regarding this statement. In the disrupted flow condition the fellow student resumed the conversation as in the flow condition, but after a brief silence had been described (i.e., “Briefly, it remains silent. Suzanne stirs her coffee”).

Dependent measures. After reading the scenario, participants’ emotions during the conversation were assessed by asking whether they felt distressed, afraid, angry, and hurt (negative emotions, Cronbach’s $\alpha = .78$), along with 10 filler emotions (1 = not at all, 7 = completely). Belonging, control, and self-esteem were assessed by means of the 15-item Need Threat Scale (NTS; Van Beest & Williams, 2006, all alphas $> .81$). Additionally, five items measured social validation (“I had the feeling my opinions were validated”, $\alpha = .85$) and five items measured rejection ($\alpha = .90$, Gaertner & Iuzzini, 2005). Participants indicated their perceived consensus in the group by rating their agreement with the statement: “*group members agreed with one another on whether obese people should pay for an extra seat in the bus*”. Needs, rejection, and perceived consensus items were rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Results and discussion

Rejection and emotions. Means are reported in Table 3.1. Participants in the disrupted flow condition felt significantly more rejected, $F(1, 100) = 21.38, p < .001, \eta^2 = .18$, and reported more negative emotions, $F(1, 99) = 17.06, p < .001, \eta^2 = .15$.

Social needs and consensus. As predicted, participants in the flow condition reported more belonging, $F(1, 100) = 8.09, p < .01, \eta^2 = .08$, more self-esteem, $F(1, 100) = 18.85, p < .001, \eta^2 = .16$, more social validation, $F(1, 100) = 16.67, p < .001, \eta^2 = .14$, and higher levels of perceived consensus, $F(1, 100) = 15.98, p < .001, \eta^2 = .14$. Control feelings were not significantly influenced by the silence, $F(1, 100) = 1.09, ns$.

Table 3.1 Mean effects of flow in Study 1 (*SDs* in brackets).

	Flow (n = 50)	Disrupted flow (n = 51)
Rejection	2.11 _a (1.01)	3.07 _b (1.10)
Negative emotions	2.06 _a (.92)	2.93 _b (1.17)
Belonging	5.12 _a (.85)	4.56 _b (1.11)
Control	5.04 (1.01)	4.82 (1.08)
Self-esteem	5.58 _a (1.06)	4.59 _b (1.23)
Validation	4.85 _a (.88)	4.01 _b (1.17)
Perceived consensus	3.40 _a (1.99)	2.12 _b (1.17)

Note: Within each row, means with different subscripts differ significantly at $p < .01$, means with no subscripts do not differ significantly.

Results show that flowing conversations are associated with higher feelings of belonging, control, self-esteem, social validation, and perceived consensus, than conversations that are disrupted by a silent moment. This confirms that conversational flow serves different social needs. Furthermore, disrupted conversations increase negative emotions and feelings of rejection, resembling ostracism experiences (e.g., Williams, 2001). This indicates that a brief disruption of conversational flow is interpreted as rejection, even when nobody is factually excluded from the conversation.

Study 2

Study 2 was designed as a replication in a more realistic setting. Because conversational flow was expected to be a pleasant state, we included a measure for positive emotions. Furthermore, Study 2 aimed to disrupt the conversational flow more subtly than Study 1. To this end, participants imagined being a student in a videotaped conversation in

which either a silent moment occurred (disrupted flow condition) or not (flow condition). The duration of silence was chosen in a way that it was unlikely to be noticed consciously. In order to assess whether conversational flow or disrupted flow were stronger contributors to the effects, we added a base rate condition, in which participants received equivalent information about the group discussion, but saw no video.

Methods

Participants and design. Sixty undergraduates (51 female) were randomly assigned to one of three conditions (flow vs. disrupted flow vs. base rate).

Procedure. Participants were seated behind personal computers in individual cubicles. In the flow and the disrupted flow condition, participants were instructed to watch a 6-minute video of three female students – who knew each other superficially – having a conversation about relationships. Participants were instructed to imagine being one of the conversation partners (named Linda). After four minutes of ongoing conversation Linda said: “*Recently, I heard about a teacher having sex with students, I think that this should not be allowed. Such a teacher should be fired immediately*”. In the flow condition the other group members smoothly continued the conversation on a topic not directly related to Linda’s statement. The conversation continued approximately two more minutes with no further reference to Linda’s statement. In the disrupted flow condition, the statement was followed by four seconds of silence, after which the conversation continued similar to the flow condition. In the base rate condition participants received the same information as given in the video (a script and photos of the discussants), but no information about the fluency of the conversation. This assessed participants’ baseline assumptions about the emotions and needs triggered by the conversation, irrespective of the actual flow. Afterwards, all participants filled out a number of questionnaires.

The duration of silence in the video was pilot-tested, as the appropriate time varies between interactions (Burgoon & Saine, 1978). A pilot ($n = 40$) showed the video with edited silences of either 2.5, 4, or 6 seconds. Four seconds appeared to be an optimal duration of silence to ensure that

participants did not notice the silence consciously, still perceived the conversation as natural, but nevertheless felt that the conversation was significantly less pleasant.

Dependent measures. Negative emotions, the four needs, perceived consensus, and rejection were examined as in Study 1. Three positive emotions were added to the emotions scale (i.e., happy, strong, & independent, $\alpha = .69$).

Participants estimated the duration in seconds between Linda's statement and the other group member's response. Finally, to check whether participants noticed the video edit, they were asked whether they had seen something remarkable in the video.

Results and discussion

Manipulation checks. Estimated time passing before the group members responded to Linda's statement did not differ between conditions ($M_{disrupted\ flow} = 3.58$, $SD_{disrupted\ flow} = 2.17$, $M_{flow} = 3.28$, $SD_{flow} = 1.41$, $F(1, 37) = .25$, *ns*), implying that participants did not consciously detect the silence. Four participants reported that they thought the video was edited. They were removed from the analyses.

Rejection and emotions. All means are reported in Table 3.2. There was a significant effect of condition on rejection $F(2, 57) = 5.51$, $p < .01$, $\eta^2 = .16$, negative emotions, $F(2, 57) = 9.70$, $p = .001$, $\eta^2 = .23$, and positive emotions, $F(2, 57) = 9.58$, $p < .001$, $\eta^2 = .25$. In the disrupted flow condition participants reported more rejection, more negative emotions and less positive emotions than in the flow and base rate conditions (which were not different from each other).

Need threats and consensus. Condition significantly influenced participants' feelings of belonging, $F(2, 57) = 6.03$, $p < .01$, $\eta^2 = .18$; self-esteem, $F(2, 57) = 8.78$, $p < .001$, $\eta^2 = .24$; social validation, $F(2, 57) = 6.39$, $p < .01$, $\eta^2 = .18$; and perceived consensus, $F(2, 57) = 5.65$, $p < .01$, $\eta^2 = .17$. Higher need satisfaction and consensus were reported in the

flow condition and base rate condition than in the disrupted flow condition.⁴ Control feelings were not influenced by condition ($F < 1$).

Table 3.2 Mean effects of flow in Study 2 (*SDs in brackets*).

	Baserate (n = 23)	Flow (n = 18)	Disrupted flow (n = 19)
Rejection	1.83 _a (.85)	1.90 _a (1.04)	2.80 _b (1.18)
Negative emotions	2.01 _a (.96)	2.23 _a (.94)	3.32 _b (1.26)
Positive emotions	4.97 _a (.63)	4.96 _a (.77)	3.96 _b (1.05)
Belonging	5.90 _a (.72)	5.66 _a (.78)	4.89 _b (1.30)
Control	4.90 (.92)	4.76 (1.26)	4.39 (1.09)
Self-Esteem	5.70 _a (1.03)	5.53 _a (.89)	4.42 _b (1.18)
Validation	5.17 _a (.86)	4.86 _a (.85)	4.18 _b (1.00)
Perceived consensus	4.70 _a (1.33)	4.28 _a (1.32)	3.32 _b (1.38)

Note: Within each row, means with different subscripts differ significantly at $p < .05$, means with no subscripts do not differ significantly.

Study 2 shows that conversational flow is associated with positive emotions, feelings of belonging, self-esteem, social validation, and perceived consensus. The effects in the base rate condition resemble those in the flow condition, suggesting that conversational flow may be the standard in conversations: Without any information about the fluency, people assume that there is flow. However, a mere four-seconds silence (in a six-minute video clip) suffices to disrupt the conversational flow and make one feel distressed, afraid, hurt, and rejected. These effects occur despite participants' unawareness of the short, single silence.

⁴ Consensus was correlated with rejection ($r = -.35$), belonging ($r = .43$), social validation ($r = .30$), and self-esteem ($r = .33$). Consensus did not mediate the effects of flow on the other dependent variables.

General Discussion

three

The present research shows that conversational flow is associated with positive emotions and a heightened sense of belonging, self-esteem, social validation, and consensus. Disrupting the flow by a brief silence produces feelings of rejection and negative emotions. Study 2 also shows that the high levels of need satisfaction in the flow condition resembled base rate levels, produced by mere reading of the script. Presumably, people expect conversations to be fluent and therefore experience disruptions as relatively harmful.

These findings extend previous research in several respects. Our finding that fluent conversations induce higher levels of belonging than disrupted conversations adds to research by Lakens (2010), showing that synchronically moving people are perceived as a group. We show that groups that converse harmoniously make people feel they belong. Moreover, we found that conversational flow relates to higher self-esteem, which is compatible with the suggestion that fluency signals a positive state of affairs (Winkielman et al., 2003). However, our studies revealed no relation between conversational flow and feelings of control. Possibly, this is because conversational flow to some extent implies a relinquishing of control and allowing oneself to be led by others.

Further, complementary to explicit processes of social validation (e.g., Festinger, 1954), our research suggests a more implicit route to social validation. People do not always actively search for opinions of others, but can also validate their opinions by deriving a general *feeling* of consensus from fluent conversations. In the case of disfluency, for instance instigated by a silent moment, validating opinions becomes less of an automatic event: People may attend more closely to what is actually being said by others.

Finally, the present research reveals that although people do not consciously notice brief silences, they are influenced by conversational disfluency in a way quite similar to ostracism experiences (e.g., Williams, 2001). That is, people report feeling more rejected and experience more negative emotions when a conversation is disrupted by

a silence, rather than when it flows. Thus, disrupted flow can implicitly elicit feelings of rejection, confirming human sensitivity to social exclusion cues.

The present research uses a scenario study and a videotaped conversation to assess the psychological impact of conversational flow. Previous research on ostracism has confirmed that the consequences of observation are broadly similar to the actual experience itself (Wesselmann, Bagg, & Williams, 2009). The effects of observation and actual experience are especially similar when participants take the target's perspective, as was the case in our experiments. Nevertheless, it is likely that stronger effects may be observed in real-life situations: Our methodology would appear to be a conservative test.

The current studies reveal that conversational flow serves social needs and maintains perceived consensus. As such, this is one of the first studies showing that conversational characteristics are major contributors to social psychological processes such as social validation and belonging. We think that comprehension of social behavior will benefit from investigating the role of conversational characteristics in such processes.

Chapter four

Conversational Flow Promotes Solidarity

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Abstract

Social interaction is fundamental to the development of various aspects of “we-ness”. Previous research has focused on the role the content of interactions plays in establishing feelings of unity, belongingness and shared reality (a cluster of variables referred to as *solidarity* here). The present paper is less concerned with content, but focuses on the *form* of social interaction. We propose that the degree to which conversations flow smoothly or not is, of itself, a cue to solidarity. We test this hypothesis in samples of unacquainted and acquainted dyads who communicate via headsets. Conversational flow is disrupted by introducing a delay in the auditory feedback (vs. no delay). Results of three studies show that smoothly coordinated conversations (compared with disrupted conversations and a control condition) increase feelings of belonging and perceptions of group entitativity, independently of conversation content. These effects are driven by the subjective experience of conversational flow. Our data suggest that this process occurs largely beyond individuals’ control. We conclude that the form of social interaction is a powerful cue for inferring group solidarity. Implications for the impact of modern communication technology on developing a shared social identity are discussed.

Conversational Flow Promotes Solidarity

four

Audiovisual communication plays an increasingly important role in everyday human interaction. Notwithstanding the obvious efficiency advantages, modern technologies also make interactions susceptible to contextual disturbances, such as delays that subtly undermine the flow of the conversation. Because high-tech communication environments increasingly resemble face-to-face interactions, such delays may often go unnoticed by the speakers. Nevertheless, the present research suggests that even relatively small delays in mediated interaction can have quite powerful social effects: When conversational flow is disrupted by small delays, the development of solidarity is obstructed.

Research has shown that social interaction is a powerful social coagulant. Social interaction is fundamental to acts of social exchange and to the establishment of interdependence (Gaertner & Schopler, 1998; Lewin, 1948/1997; Thibaut & Kelley, 1959). Moreover, social interaction is a forum for social comparison (Festinger, 1954; Tajfel, 1978), and it is necessary for the emergence of socially shared realities, including the very notions of “I” and “we” (Berger & Luckmann, 1966; Mead, 1934; Searle, 1995). Accordingly, social interaction also plays a role in the “bottom-up” induction of shared social identities: A feeling of we-ness in which a heightened sense of group entitativity, shared cognition and social identification are closely meshed (Jans, Postmes, & Van der Zee, 2011; Postmes, Haslam, & Swaab, 2005). In such interactive group settings, then, a sense of “we-ness” emerges that is characterized by feelings of unity, belongingness and shared reality which, although clearly distinct in some sense, are closely interrelated. For sake of convenience, we shall refer to them as *solidarity* here. Explanations of the underpinnings of cooperation often treat the form of social interaction as subservient to the content. However, we propose that beyond these utilitarian and meaning-conveying functions, the shape of social interaction may also engender feelings of solidarity at a more basic, visceral level. This is because social interaction conveys a quality of coordination, which is in itself a key feature of solidarity.

Conversational flow promotes solidarity

Research on the form of social interaction has often focused on how interactions are smoothly and efficiently coordinated (Clark, 1996; Gambi & Pickering, 2011; Wilson & Wilson, 2005). Research revealed that in interactions, people adjust linguistic, prosodic, and nonverbal features of their speech to match those of their partners and take into account the intentions and the (performed or prospective) actions of their partners in planning their own actions (Wilson & Wilson, 2005; Giles & Coupland, 1991). This interactive system allows people to exchange speech nearly continuously by taking turns, with minimal gaps in talk (0–500 ms) and minimal overlaps, creating a sense of conversational flow (Koudenburg, Postmes, & Gordijn, 2011a, *Chapter 3*; Stivers et al., 2009; Wilson & Zimmerman, 1986). Having a conversation thus becomes comparable to other joint activities—such as dancing the tango, playing a duet, or shaking hands—in which coordination is the central, defining feature (Clark, 1996).

Research suggests that that the source of conversants' ability to coordinate is their common ground: A set of knowledge, beliefs, and suppositions that speakers believe they share (Clark, 1996; Gambi & Pickering, 2011). Such a framework of common understanding is often provided by groups to which people belong (e.g., Haslam, 2004; Tajfel & Turner, 1979; Oakes, Haslam, & Turner, 1994), suggesting that conversational flow is enhanced when speakers are members of the same group. But it is probable that this process is bidirectional (Swaab, Postmes, Van Beest, & Spears, 2007). Indeed, on the basis of our prior research (Koudenburg et al., 2011a; 2013b; 2013c; *Chapter 3, 6, 7*) we reason that the reverse process may be quite significant in social interaction. A conversation with good flow is a strong cue to the existence of common ground anchored in a sense of social unity and/or a positive relationship.

It follows that flow can be a precursor for the formation of a sense of solidarity or “we-ness,” between conversation partners. This process is central to the present research. Previous research has tended to focus on the content of interaction, or on the mere presence of interaction itself. For example, research on social identity formation suggests that the development of solidarity (in particular shared identity and shared cognition) is fueled by social interaction (Postmes et al., 2005), focusing

on the *content* of communication. In addition, interdependence research has shown that social interaction increases entitativity and cohesion (Gaertner, Iuzzini, Witt, & Orina, 2006), without clarifying whether content or form was responsible for this.

four The present research, by contrast, isolates the influence of the *form* of communication on the development of solidarity from its content. We distinguished three aspects of solidarity that might be influenced by flow. Two of these are different sides to a sense of we-ness: “Cold” perceptions of group-level unity or “entitativity” (Hamilton, Sherman, & Lickel, 1998) and “warm” feelings of group belonging. Entitativity is gestalt psychological concept that refers to the degree to which an aggregate is perceived to be a unit. In the social identity tradition, feelings of entitativity can emerge because members of one group are contrasted to an outgroup (Turner, 1985). In the interdependence literature, it refers to the degree to which group members are interdependent and form a cohesive group (Gaertner & Schopler, 1998; Lickel et al, 2000). Belonging is a closely related concept (typically used in the literature on ostracism; e.g., Van Beest & Williams, 2006) that is associated with measures of social identification with the group (i.e., feelings of attachment to the group), but also includes items that consider the reverse direction of being accepted by the group. Thirdly, we examined experiences of *shared cognition*, a concept which is relevant to literatures on common ground, shared reality and social identity content (Echterhoff, Higgins, & Levine, 2009; Kashima, Klein, & Clark, 2007; Postmes et al., 2005). We expected that conversational flow signals the existence of common knowledge, values, and beliefs, which should be associated with feelings of social validation, or perceptions that one’s beliefs are grounded, justified, and right (Smith & Postmes, 2011; Swaab et al., 2007).

The second aim of this research was to explore whether the effects of conversational flow occur automatically—i.e., beyond individuals’ control (Bargh, 1994). Interactions that are mediated by technology (e.g., video conferencing software, VOIP or even old-fashioned telephony) are prone to quite subtle disruptions in flow due to delays or technical deficiencies. We reasoned that making people aware of the source of such disruptions could provide them with the opportunity to

consciously correct for any negative effects of disrupted flow, insofar as this might be possible. We therefore explored whether giving people the opportunity to attribute disruptions in conversational flow to factors beyond the communicators' control would reduce the influence of such disruptions on feelings of solidarity. To examine this, we conducted three studies in which participants had a conversation through auditory channels (Study 1-2) or audiovisual channels (Study 3, Figure 4.1).

Study 1

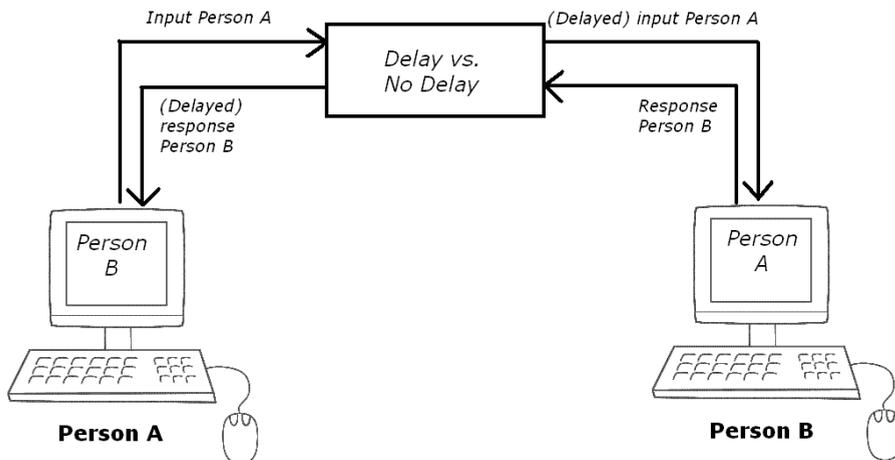
Methods

Ethics statement. The research was approved by the Ethical Committee Psychology of the University of Groningen. Informed consent was obtained in writing from all participants immediately before the research commenced.

Participants and procedure. Participants were 72 undergraduate students (57% female, 43% male; $M_{age} = 21.38$ years, $SD = 3.24$), who participated in exchange for 5 euros. Participants were assigned to 36 dyads; the members of each dyad were unacquainted with each other. Participants occupied separate laboratory cubicles equipped with headsets. These headsets were connected to a computer on which the audio-recording program Record (Propellerhead Software, Stockholm) was used for the interaction. Participants were instructed to have a 5-min conversation about holidays. To prepare for the conversation, participants were given a list of different holidays and asked to rate the extent to which they would like to go on each holiday (1 = *not at all*, 7 = *totally*).

To manipulate conversational flow, we randomly assigned dyads to either a flow or a disrupted-flow condition. In the flow condition, dyads had a 5-min conversation about holidays via headsets. The disrupted-flow condition was similar, except that the auditory feedback was delayed by 1s throughout the second half of the conversation. Pilot research indicated that a 1s delay was long enough to hamper the coordination of communicative behaviors and reduce the flow of the conversation without making participants consciously aware of the delay (cf., Pearson et al., 2008).

Figure 4.1 Experimental setup. Communication occurred via auditory channels (Studies 1, 2) or audiovisual channels (Study 3).



Dependent measures. After the conversation, participants completed a questionnaire. Entitativity was measured with three items from the entitativity scale that we adjusted for dyads (Jans et al., 2011; $\alpha = .84$; e.g. "I experience a sense of unity with the other participant"). A three-item measure of feelings of belonging was derived from the Need Threat Scale (Van Beest & Williams, 2006; $\alpha = .81$; e.g. "I had the feeling I belonged with the other participant"). Additionally, a new scale of shared cognition was constructed based on prior scales for social validation (Smith & Postmes, 2011) and shared cognition (Swaab et al., 2007), and adjusted for use in dyads. This scale contained five items: "I had the feeling my partner and I were on the same wavelength"; "My partner and I understood each other"; "My partner and I agreed with each other"; "I had the feeling my opinions were validated"; and "I had the feeling my opinions were shared" ($\alpha = .92$). Items for all measures were rated on scales from 1 (*strongly disagree*) to 9 (*strongly agree*). A manipulation check assessed the extent to which participants felt the conversation had flow (the Dutch word for flow is "*soepel*", which conveyed the conversation proceeded smoothly and effortlessly).

Results

The intraclass correlations for entitativity (.40), belonging (.59), and social cognition (.51) suggested that these scores were clustered within groups. To control for this nonindependence, we analyzed the data using multilevel modeling, with individuals (Level 1) nested in dyads (Level 2). Two outliers (standardized multilevel residual on one of the dependent variables > 3) were removed.⁵

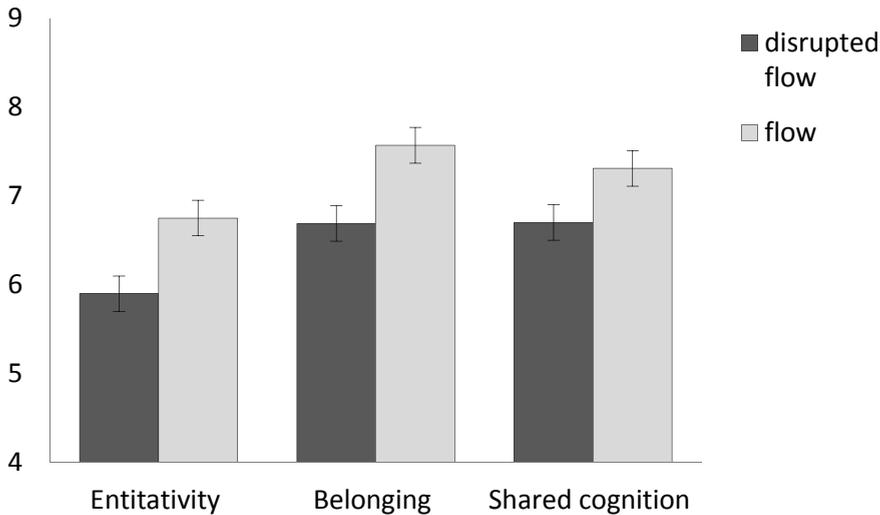
We examined the effects of group-level flow on shared-identity formation, which was measured at the individual level. The manipulation check indicated that participants in the flow condition experienced more conversational flow ($M = 7.31$, $SE = .21$) than did those in the disrupted-flow condition ($M = 6.51$, $SE = .24$), $\gamma = 1.25$, $SE = .35$, $t(34) = 3.57$, $p = .001$.

As predicted, participants in the flow condition felt more belonging, $\gamma = .88$, $SE = .28$, $t(34) = 3.16$, $p = .004$, $R^2 = .42$ and perceived their dyad to be more entitative, $\gamma = .85$, $SE = .34$, $t(34) = 2.48$, $p = .02$, $R^2 = .31$ than participants in the disrupted flow condition. No significant effect of flow on shared cognition was found, $\gamma = .59$, $SE = .36$, $t(34) = 1.67$, $p = .10$, $R^2 = .16$, although means were in the predicted direction (see Figure 4.2).

Mediation. We used the unconflated multilevel model approach (Snijders & Bosker, 1999; Zhang, Zyphur, & Preacher, 2008) to examine whether the subjective experience of conversational flow was responsible for the effect on entitativity and belonging. A 2-1-1 multilevel mediation model was specified testing whether individual-level perceived flow mediated the effects of group-level manipulated flow on individual-level entitativity and belonging. The analyses revealed an indirect effect of flow via perceived flow on entitativity, $\gamma = .62$, 95% CI [0.15, 1.09], and on belonging, $\gamma = .47$, 95% CI [0.01, 0.92].

⁵ When including outliers and nonnative Dutch speakers in the analyses, similar results were obtained in Studies 1 and 3. In Study 2, the effects of ψ_2 on belonging and entitativity were smaller and achieved only marginal significance. The effects of ψ_1 did not change.

Figure 4.2. Mean levels of entitativity, belonging, and shared cognition per condition of flow in Study 1. Error bars represent standard errors.



Discussion

Study 1 showed that participants who had a conversation with flow experienced a higher sense of solidarity than did those who had a conversation in which flow was disrupted. In addition, the subjective experience of flow mediated the effects of manipulated flow on feelings of belonging and entitativity. However, results could reflect either the hypothesized elevation of we-ness in the flow condition or a decreased sense of we-ness in the disrupted-flow condition. We examined this possibility in Study 2 by modeling it after Study 1 but adding a control condition. Additionally, Study 2 explored whether individuals would be able to control for the effects of disrupted flow if they were made aware of the source of the disruption.

Study 2

Methods

Participants were 130 undergraduate students (82% female, 18% male; $M_{age} = 19.86$ years, $SD = 2.24$) who participated in exchange for partial course credits or 5 euros.

Procedure. First, unacquainted participants were assigned to dyads. As in Study 1, we assigned dyads to flow and disrupted-flow conditions, but we created two additional conditions. One was similar to the disrupted-flow condition, with one critical difference: Before starting the conversation, participants were informed that “the connection could be poor, due to which some glitches might occur.” This “cued” condition was intended to give participants an opportunity to attribute the flow disruption to technical deficiencies, and to examine whether this would reduce the effects of disrupted flow. The other new condition was a control condition in which participants were instructed to talk for 2 min about their holidays while the other member of their dyad listened but could not respond. After 2 min, these roles were switched. The control condition thus allowed dyads to exchange information similar to that exchanged by dyads in the other conditions, but in the absence of any actual conversation (or flow).

Dependent variables. We used the complete four-item entitativity scale (Jans et al., 2011; $\alpha = .91$). Belonging was measured with four items derived from the Need Threat Scale (Van Beest & Williams, 2006; $\alpha = .86$), excluding one item unsuitable for dyads (“I felt like an outsider during the conversation”). Shared cognition was measured as in Study 1 ($\alpha = .89$).

Results

Data were screened and analyzed as in Study 1. The intraclass correlations for entitativity (.10), belonging (.50), and social cognition (.30) indicated that multilevel analysis was required. Five dyads were excluded because they included a nonnative Dutch speaker, which could influence the flow of the discussion because of that member’s difficulty

with the Dutch language. Additionally, two outliers (standardized multilevel residual on one dependent variable >3) were excluded.

In order to systematically compare the four conditions, we used a Helmert contrast to compare each condition with all subsequent conditions. Thus, ψ_1 compared the control condition with the flow condition and both disrupted-flow conditions. ψ_2 compared the flow condition with both of the disrupted-flow conditions. ψ_3 compared the normal disrupted-flow condition with the cued disrupted-flow condition.

Manipulation check. The manipulation check confirmed that participants in the flow condition felt their conversations had more flow ($M = 5.84, SE = .19$) than did participants in the disrupted-flow condition ($M = 5.27, SE = .14$), $\psi_2: \gamma = .53, SE = .20, t(56) = 2.69, p = .01$. Additionally, participants in both the flow and the disrupted-flow conditions perceived the interaction to have more flow than did participants in the control condition, $\psi_1: \gamma = .96, SE = .22, t(56) = 4.31, p < .001$. The cue did not influence whether conversations were perceived as having flow, $\psi_3: t < 1, ns$.

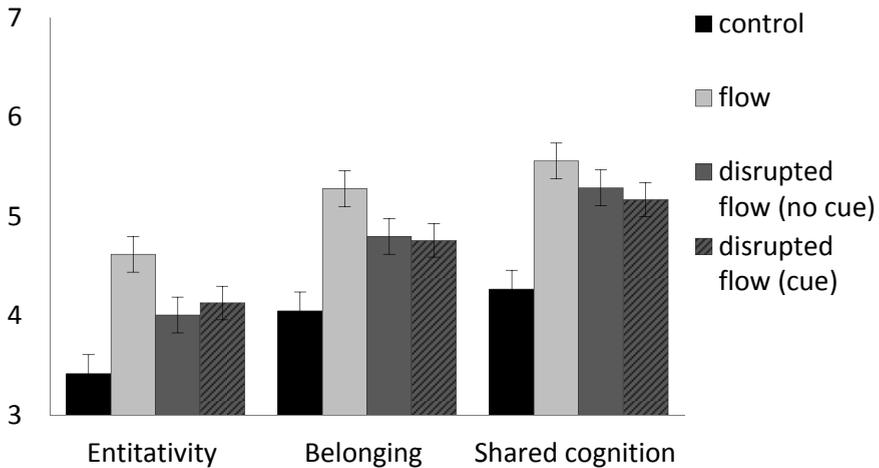
Dependent variables. As predicted, participants who had a conversation (the flow and disrupted-flow conditions) reported more belonging, $\gamma = .68, SE = .17, t(56) = 3.98, p = .001, R^2 = .44$; entitativity, $\gamma = .63, SE = .19, t(56) = 3.38, p = .002, R^2 = .79$; and shared cognition, $\gamma = .80, SE = .17, t(56) = 4.86, p < .001, R^2 = .41$ than those in the control condition did (ψ_1).

Moreover, as in Study 1, conversations with flow instigated more belonging, $\gamma = .33, SE = .15, t(59) = 2.19, p = .03, R^2 = .21$; and entitativity, $\gamma = .37, SE = .17, t(56) = 2.22, p = .03, R^2 = .73$ than conversations in which flow was disrupted (ψ_2). The data showed no significant effects of the flow manipulation on experienced shared cognition, $\gamma = .21, SE = .15, t(56) = 1.41, p = .16, R^2 = .04$, although effects were in the predicted direction (see Figure 4.3).

No effect of the cue on any of the dependent variables was found ($\psi_3: ts < .40, ns$).

Conversational flow promotes solidarity

Figure 4.3. Mean levels of entitativity, belonging, and shared cognition per condition in Study 2. Error bars represent standard errors.



four

Mediation. As in Study 1 we examined whether the effect of flow (ψ_2) influenced the dependent variables via perceived flow. ψ_1 and ψ_3 were added as covariates. Results showed an indirect effect of flow via perceived flow on entitativity, $\gamma = .14$, 95% CI [0.002, 0.29], and on belonging, $\gamma = .23$, 95% CI [0.08, 0.39].

Discussion

Replicating Study 1, Study 2 shows that belonging and entitativity are influenced by the delay manipulation. Mediation analysis shows that the manipulation decreases the subjective experience of flow, which leads to lower levels of belonging and entitativity. Moreover, having a conversation (as opposed to giving and hearing monologues) strongly predicts the emergence of a sense of solidarity, because it increases feelings of belonging and entitativity as well as socially shared cognition.

The data revealed no effect of providing participants with a cue to the source of the delay, on any of the dependent variables. Possibly, the cue was too subtle and did not increase participants' awareness of the delay in their connection. To reduce this potential ambiguity, we provided

participants in Study 3 with feedback about their Internet connection during the conversation.

In addition, in Study 3 we sought to increase the generalizability of our findings from Studies 1 and 2 in three different ways. First, we conducted the study at a job fair to examine whether the findings from our studies conducted in a lab environment would replicate in a more naturalistic environment. Second, we had participants communicate via both auditory *and visual* channels, using computers. Finally, unlike the previous studies, we also included participants who were already acquainted with each other.

four

Study 3

Methods

Participants and design. Participants were 134 individuals (60% female, 40% male; $M_{age} = 34.52$ years, $SD = 12.42$, range = 17–61 years), who were recruited at a job fair to participate in a study about online interactions. Participants could participate either with an acquaintance ($n = 78$) or individually ($n = 56$). Those participating individually were assigned to a dyad. Dyads were allocated to one of four conditions that manipulated whether feedback was delayed throughout the second half of a 5-min conversation (disrupted flow vs. flow) and whether participants were provided with a cue about the connection (no cue vs. cue).

Procedure. Participants were informed that they would have a conversation with their acquaintance or another visitor of the job fair. If members of a dyad did not know each other, they were introduced briefly. Next, the two participants in each dyad were seated behind different tables with laptops, which were positioned so that direct visual or auditory contact was impossible. Here, participants filled out a questionnaire about holidays. Dyads were then instructed to have a 5-min conversation about holidays. Participants communicated via both visual and auditory channels using the laptops, which were connected by a network cable. A pretest in which we tested different durations of

the delay in the video paradigm had indicated that 1.5s was the most appropriate duration for reducing the subjective experience of flow. To make the delay as smooth as possible, without any visible glitches, we had it automatically set in after 2.5 min of conversation and slowly progress to a 1.5-s delay, which continued throughout.

To manipulate whether the delay could be attributed to a source other than the members of the dyads, we presented half of the participants with a cue about the Internet connection throughout the conversation. In the cued conditions, a bar was shown at the top of the screen displaying four little green squares accompanied by the text “CONNECTION IS GOOD”. In the cued disrupted-flow condition, at the moment the delay set in, these squares turned orange and the text “PROBLEMS WITH CONNECTION” was displayed. In the cued flow condition, the green squares and the text “CONNECTION IS GOOD” were displayed throughout the conversation. No information about the connection was given in the no-cue conditions.

Dependent variables. After the conversation, we had participants complete the same questionnaire used in Study 2 to assess their perceived flow (manipulation check), feelings of belonging, perceived entitativity, and shared cognition. In addition, participants rated their satisfaction with the experimental technology by indicating their agreement with seven statements, such as “I am satisfied with the quality of this program” using 7-point scales (1 = *completely disagree*, 7 = *completely agree*; $\alpha = .85$). Finally, we asked participants whether they had known their interaction partner before the study (1 = *yes*, 2 = *no*).

Results

Intraclass correlations for entitativity (.64), belonging (.42), and social cognition (.55) were high, indicating that multilevel analysis was required. Two dyads were excluded from the analyses because they included a nonnative Dutch speaker. Four outliers (multilevel standardized residuals > 3 on one of the dependent variables) were removed from the analysis.

First, we examined whether the effects of conversational flow were replicated by regressing individual-level belonging, entitativity, and shared cognition onto group-level flow. Prior acquaintance of the members of dyads was added as a covariate in the analyses. Main effects showed that a priori acquaintance was related to higher levels of perceived flow ($M_{acquaintance} = 5.77, SE = .15, M_{stranger} = 5.19, SE = .19$), $\gamma = .54, SE = .26, t(62) = 2.10, p = .039, R^2 = .13$, satisfaction with technology ($M_{acquaintance} = 5.11, SE = .12, M_{stranger} = 4.73, SE = .15$), $\gamma = .42, SE = .19, t(62) = 2.20, p = .032, R^2 = .11$, entitativity ($M_{acquaintance} = 5.90, SE = .12, M_{stranger} = 3.67, SE = .15$), $\gamma = 2.26, SE = .21, t(62) = 10.88, p < .001, R^2 = .80$, belonging: ($M_{acquaintance} = 6.03, SE = .12, M_{stranger} = 4.47, SE = .15$), $\gamma = 1.57, SE = .20, t(62) = 8.03, p < .001, R^2 = .84$, and shared cognition: ($M_{acquaintance} = 6.02, SE = .09, M_{stranger} = 4.89, SE = .11$), $\gamma = 1.17, SE = .16, t(62) = 7.35, p < .001, R^2 = .63$. Testing the flow-by-acquaintance interaction revealed that the effect of the manipulation on perceived flow was larger among strangers than among acquaintances, $\gamma = 1.22, SE = .50, t(61) = 2.46, p = .02$. No other interaction effects were found, $ts < 1, ns$. The effect sizes (R^2) that follow refer to the variance that is explained by the flow manipulation, as a percentage of the variance that remained after controlling for a priori acquaintance.

The manipulation check confirmed that participants in the flow condition perceived the conversation to have more flow ($M = 5.89, SE = .18$) than did participants in the disrupted-flow condition ($M = 5.20, SE = .16$), $\gamma = .74, SE = .25, t(62) = 2.91, p = .005, R^2 = .32$. Participants in the flow condition were also significantly more satisfied with the technology ($M = 5.53, SE = .14$) than were participants in the disrupted-flow condition ($M = 4.37, SE = .13$), $\gamma = 1.15, SE = .18, t(62) = 6.23, p < .001, R^2 = .95$. In addition, the findings from the previous studies were replicated: Flow increased perceived entitativity, $\gamma = .46, SE = .20, t(62) = 2.25, p = .028, R^2 = .22$, and belonging, $\gamma = .39, SE = .19, t(62) = 2.02, p = .047, R^2 = .31$, and marginally increased shared cognition, $\gamma = .31, SE = .16, t(62) = 1.98, p = .052, R^2 = .12$ (see Figure 4.4).

We next explored whether these effects were reduced when a cue was given as to the source of the flow disruption. To this end, the cue manipulation and the flow-by-cue interaction were added as predictors to the model. No extra variance was explained for entitativity, belonging,

Conversational flow promotes solidarity

or satisfaction with the experimental technology, $R^2 < .03$, and, moreover, neither the cue manipulation nor the flow-by-cue interaction significantly affected these variables (all t s < 1.58 , ns). For shared cognition, the cue manipulation and the flow-by-cue interaction explained extra variance, $R^2 = .08$. There was no evidence for a main effect of the cue factor ($t < 1$, ns), but a marginally significant flow-by-cue interaction was found, $\gamma = .29$, $SE = .16$, $t(62) = 1.85$, $p = .069$. Further investigation of the interaction pattern suggested that among participants who were given no cue about their Internet connection, shared cognition was lower in the disrupted-flow condition than in the flow condition, $\gamma = .90$, $SE = .44$, $t(62) = 2.07$, $p = .04$. Among participants who were given a cue, shared cognition was not influenced by the flow disruption ($t < 1$, ns).

Mediation. The same analysis used in Study 1 was performed, with level of prior acquaintance entered as a covariate. As in the previous studies, the analyses revealed an indirect effect of flow via perceived flow on entitativity, $\gamma = .43$, 95% CI [0.06, 0.80]), belonging, $\gamma = .44$, 95% CI [0.09, 0.79]), and shared cognition, $\gamma = .36$, 95% CI [0.07, 0.65].

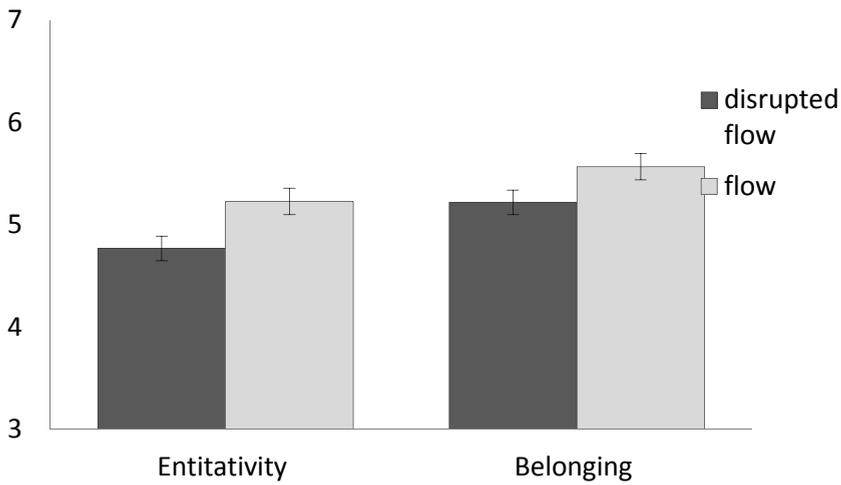
Together, these results suggest that conversational flow predicts the emergence of feelings of solidarity. Additionally, providing participants with the opportunity to attribute the disruption of conversational flow to a deficient Internet connection did not reduce the effects of flow on feelings of belonging and entitativity, and only marginally reduced its effects on shared cognition.

A Priori Consensus

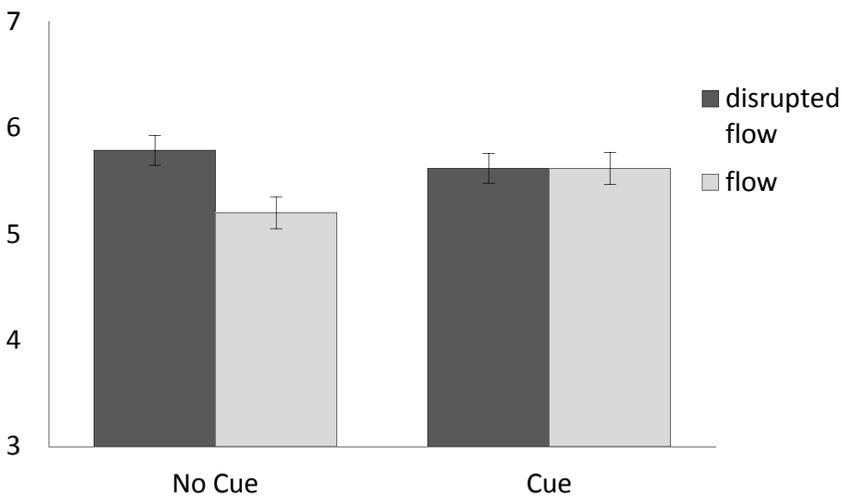
The ratings of holidays that participants had made prior to the conversations in each of these studies provided an objective measure of a priori consensus within dyads. We examined whether the effects of conversational flow held when controlling for this baseline consensus. Results showed that in Studies 1 and 3, the effects of flow were not reduced when we controlled for a priori consensus. In Study 2, the effects were slightly reduced (See supplementary materials for a detailed description of these analyses).

Figure 4.4. Estimated marginal means for entitativity and belonging per condition of flow in Study 3. Means are corrected for prior acquaintance. Error bars represent standard errors.

A. Main effects of flow on entitativity and belonging.



B. Cue-by-flow interaction on shared cognition.



four

General Discussion

Three studies revealed that the subjective experience of conversational flow can lead to the emergence of a sense of we-ness. A similar pattern was found for the influence of perceived conversational flow on shared cognition, although the effects were clearly smaller. The effects of flow on entitativity, belongingness and shared cognition seem to occur independently of the content of the conversation. Moreover, these effects appear to be occurring automatically, in the sense that awareness that the disruption is occurring does not enable individuals to consciously compensate for the detrimental psychological effects of disrupted flow for feelings of solidarity.

These results highlight the importance of characteristics of conversation other than content for establishing shared identities. We believe that this is an important consideration in a world that is increasingly globalizing thanks to, for example, the spread of the Internet. Globalizing technologies not only facilitate communication but also introduce new forms of “high-bandwidth” social interaction (such as desktop video conferencing). As such new forms of social interaction become increasingly prominent means of conversation, they may ironically hamper the ability to establish particular kinds of social relations precisely because they do not allow people to realize the close coordination they expect a good conversation to have. Conversations can thus end up feeling “bad” for reasons that speakers do not understand. In such circumstances, technology may subtly undermine the development of a shared sense of identity.

Among others, this research has practical relevance for the design of communication technology. In the literature on technology-mediated audio and video interaction, there is a pervasive belief that face-to-face interaction is superior for many different purposes (e.g., Doherty-Sneddon et al., 1997) and accordingly technology design tends to assume that it would be important for mediated communication to mimic “real” face-to-face interaction as much as possible (Manstead, Lea, & Goh, 2011). The present research points to a specific social-psychological process that may explain one reason why such mediated

communications that are “almost real” may nevertheless feel different and sometimes perform less well than expected. Whereas good conversational flow through instant interaction gives communicators the ability to form strong social bonds “inductively” (see also Postmes, Spears, Lee, & Novak, 2005), even very short delays can disrupt this process (especially in novel relationships) and thereby undo some of the supposed benefits of instant interaction. This suggests that some of the supposed negative social consequences of mediated communication may not be due to the limited bandwidth of technology *per se*, but rather to the suboptimal transmission of signals due to delays on the “line.” It follows that in future research on the effects of mediated communication in comparison with face-to-face interaction, it is essential for researchers to ensure that delays cannot be a confounding factor that may offer an alternative explanation for the results.

A broader theoretical implication of this research is that communication’s social effects may stem from the act and art of conversation *per se*: The micro-level situation and dynamic are key factors that contribute to the emergence of higher order (macro-level) social processes and structures (see also Reis, 2008; Smith & Semin, 2004). Accordingly, the findings are relevant to the question of how “healthy” social relationships can be maintained across a wide variety of face-to-face settings: We believe that it would be important to pay close attention to the form of interaction in settings as varied as close relationships, work settings, education, and clinical settings. The present research adds the insight that the smooth taking of turns is an important aspect of the art of conversation, which may have significant consequences.

The idea that communication is a vehicle for social exchange is ancient in science and popular culture: In the biblical story of the Tower of Babel, God ends a state of solidarity among people by introducing multiple languages: “And from thence did the Lord scatter them abroad upon the face of all the earth” (Genesis 11:9, King James Translation). Our research suggests that although such social disintegration can result from the drastic step of creating multiple languages, it can also be achieved by more subtle and less discernible means. If one wanted to go

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to less trouble in undermining the world's unity, one could start with a dodgy internet connection obstructing conversational flow.

four

Supplementary Materials

Additional analyses: A priori consensus

four By using participants' ratings of different holiday types and destinations, it was possible for us to calculate levels of consensus between members of each dyad prior to their conversation. In each study, before starting the conversation, participants in each dyad were given a list of eight types of holidays and seven holiday destinations and were asked to indicate the extent to which they would like to go on each type of holiday and to each destination, using 7-point scales (1 = *not at all*, 7 = *totally*). The holiday types were a "sun, sea, and beach holiday," a "party holiday," a "winter sports holiday," a "city trip," a "backpacking holiday," an "excursion," a "camping holiday," and a "cruise holiday." The different destinations were Australia, southern Europe, Scandinavia, Latin America, North America, Asia, and Africa. The levels of prior consensus within the dyad were assessed by averaging within-dyad differences in scores across all holiday types and destinations (averages standardized and multiplied by -1).

Study 1. To determine whether the effect of disrupted conversational flow on feelings of solidarity would hold when taking into account dyadic partners' consensus prior to the conversation, we added the consensus scores to the model as a predictor. Using hierarchical linear modeling, the effects of the group-level flow (flow vs. disrupted flow) and a priori consensus were modeled to predict feelings of solidarity on the individual level. The data showed no influence of a priori consensus on feelings of shared cognition, $\gamma = 0.04$, $SE = 0.19$, $t(33) = 0.20$, *ns*, entitativity, $\gamma = 0.05$, $SE = 0.03$, $t(33) = 1.59$, $p = .12$, or belonging, $\gamma = 0.03$, $SE = 0.14$, $t(33) = 0.19$, *ns*. However, flow still positively predicted entitativity, $\gamma = 0.86$, $SE = 0.36$, $t(33) = 2.43$, $p = .02$, and belonging, $\gamma = 0.87$, $SE = 0.29$, $t(33) = 3.00$, $p = .006$. No significant effect of flow on shared cognition was found, $\gamma = 0.61$, $SE = 0.37$, $t(33) = 1.65$, $p = .11$, although means were in the predicted direction. These results reveal that conversational flow more strongly predicted the emergence of feelings of solidarity than did prior levels of consensus between members of dyads.

Study 2. Five participants did not fill out the questionnaire about holidays, so the level of consensus between them and their dyadic partners could not be estimated. Results showed that when controlling for consensus between interaction partners, having a conversation (as opposed to the control condition, ψ_1) still strongly influenced participants' feelings of belonging, $\gamma = 0.66$, $SE = 0.20$, $t(47) = 3.33$, $p = .002$, entitativity, $\gamma = 0.65$, $SE = 0.22$, $t(47) = 3.01$, $p = .005$, and shared cognition, $\gamma = 0.80$, $SE = 0.19$, $t(47) = 4.22$, $p < .001$.

However, flow (as opposed to disrupted flow, ψ_2) now marginally predicted belonging, $\gamma = 0.31$, $SE = 0.17$, $t(47) = 1.78$, $p = .08$, and no longer affected entitativity, $\gamma = 0.23$, $SE = 0.19$, $t(47) = 1.21$, $p = .23$, or shared cognition ($t < 1$, *ns*).

A priori consensus influenced feelings of shared cognition, $\gamma = 0.08$, $SE = 0.03$, $t(47) = -2.02$, $p = .05$, but had no effect on feelings of entitativity, $\gamma = -0.05$, $SE = 0.03$, $t(47) = -1.59$, $p = .12$, or belonging, $\gamma = -0.04$, $SE = 0.03$, $t(47) = -1.48$, $p = .14$.

Study 3. One participant did not complete the questionnaire about holidays, so consensus could not be estimated for that participant's dyad. When controlling for a priori consensus, the effects of flow on entitativity, $\gamma = 0.42$, $SE = 0.20$, $t(60) = 2.07$, $p = .04$, belonging, $\gamma = 0.39$, $SE = 0.18$, $t(60) = 2.15$, $p = .03$, and shared cognition, $\gamma = 0.31$, $SE = 0.15$, $t(60) = 2.10$, $p = .04$, remained significant. There was no evidence for an effect of prior consensus on any of these variables (all γ s < 0.08 , t s < 1.02 , *ns*).

In addition, we found no main effects of the cue manipulation on any of the variables (all t s < 1.37 , *ns*), whereas the effect of the flow-by-cue interaction on shared cognition remained marginally significant, $\gamma = 0.54$, $SE = 0.30$, $t(60) = 1.76$, $p = .08$. No other interaction effects were found (all t s < 1.13 , *ns*).

Together, these results reveal that the effects of conversational flow on feelings of belonging and entitativity occur largely independently of the content of the conversation. Only in Study 2, taking into account a priori consensus between members of dyads led to a reduction in the effects of flow. However, in Study 1 and 3, the effects of flow on feelings of we-ness remained after taking into account a priori consensus.

Chapter five

Uniform and Complementary Social Interaction: Distinct Pathways to Solidarity

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Abstract

We examine how different forms of co-action give rise to feelings of solidarity. We propose that (a) coordinated action elicits a sense of solidarity, and (b) the process through which such solidarity emerges differs for different forms of co-action. We suggest that whether groups are based on uniform action (e.g. synchronizing, as when people speak in unison) or on more complementary forms of action (e.g. alternating, when speaking in turns) has important consequences for the emergent position of individuals within the group. Uniform action relies on commonality, leaving little scope for individuality. In complementary action each individual makes a distinctive contribution to group formation, thereby increasing a sense of personal value to the group, which should contribute to the emergence of solidarity. The predictions receive support from five studies, in which we study groups in laboratory and field settings. Results show that both complementary and uniform co-action increase a sense of solidarity compared to control conditions. However, in the complementary action (or turn-taking) condition, but not in the uniform action (synchrony) condition, the effect on feelings of solidarity is mediated by a sense of personal value to the group.

Uniform and Complementary Social Interaction: Distinct Pathways to Solidarity

five

Researchers often distinguish between groups and social categories. Group research tends to focus on small dynamic groups with some form of interdependence and social interaction. Studies of social categories often focus on a different set of processes: Group members' perceptions of large social groups that exist by virtue of some shared property such as nationality or ethnicity (e.g., Postmes, Spears, Lee, & Novak, 2005). Although categorical processes appear to be more prevalent in large groups and interactive processes in small groups (Lickel et al., 2000; Jans, Postmes, & Van der Zee, 2011) we believe that both sets of processes occur in all groups (small and large) to some extent. In the present paper, our broad aim is to learn more about the operation of interactive and categorical processes in small groups, in order to understand how feelings of solidarity emerge.

Solidarity may be based on similarities between individuals: Uniformity of characteristics or actions fosters both perceptions of entitativity and social categorization (e.g., Dasgupta, Banaji, & Abelson 1999; Lakens, 2011; Marsh, Richardson, & Schmidt, 2009; McGarty, Haslam, Hutchinson, & Grace, 1995). But solidarity can also emerge through interactions that appear to be much less uniform (Gaertner & Schopler, 1998; Koudenburg, Postmes, & Gordijn, 2013a, *Chapter 4*). Most social interactions tend to consist of sequences of complementary actions: In conversations, for example, people take turns making distinctive contributions. Interestingly however, the same groups that engage in dialogic interaction may, at other occasions, express and develop solidarity through uniform actions such as communal prayer, dance, etc.

Although similarity and complementarity may both foster a sense of solidarity, we propose that the process is very different because the individual group members play such different roles in the group's formation. In similarity-based groups, a sense of unity could be derived

from the ability to distinguish the own group from its social context, thereby placing the individual in the background (cf. Campbell, 1958; Turner, 1985). In complementarity-based groups however, the distinctive input of each individual is a fundamental part of the group's actions, making each individual of personal value to group formation. It is this distinction that is central to the current research.

Two Pathways to Solidarity

In the Oxford English Dictionary solidarity is defined as “the fact or quality, on the part of communities etc., of being perfectly united or at one in some respect, especially in interests, sympathies, or aspirations”. In sociological and social-psychological theorizing, the concept of solidarity has been used to explain the ways in which communities are tied together (e.g. Durkheim, 1893/1984) or to specify some sort of attachment of belonging to a group (Leach et al., 2008). Accordingly, we use the term solidarity here to refer to the both the experience that an aggregate of individuals constitutes a social unity (i.e. the entitativity of a group), and the feeling that one is part of this social unity (i.e. the sense of belonging or identification with this group).

A broad road range of theories proposes that similarity is a key predictor of solidarity. According to the similarity-attraction hypothesis (Byrne, Griffitt, & Stefaniak 1967; Byrne & Griffitt, 1969) people are more likely to feel attracted to similar others. In group research, self-categorization theory (SCT: Turner, 1982; 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) proposes that people are most likely to categorize as group members when differences within the group are smaller than differences between groups. According to SCT, individuals tend to perceive themselves in terms of a shared stereotype that defines the ingroup in contrast to relevant outgroups (e.g., Hogg & Turner, 1987).

Postmes et al. (2005) argued that this type of group formation echoes some characteristics of Durkheim's (1893/1984) concept of *mechanical solidarity*: A form of solidarity anchored in commonalities or concurrent

actions. Durkheim associated mechanical solidarity with groups including indigenous tribes, who used rhythmic co-action to increase and express group unity. Indeed, more recent research has supported the idea that people synchronize their behavior in interactions (Bernieri & Rosenthal, 1991; Cappella, 1996; LaFrance, 1982) and that such synchronous interaction increases not only group entitativity (the perception of unity of the group as an entity) but also interpersonal liking (the strength of interpersonal relations within the group) and cooperative behavior (Hove & Risen, 2009; Lakens, 2010; Marsh et al., 2009; Valdesolo & DeSteno, 2011). Moreover, synchronous movement has been shown to blur self-other boundaries: Even complete strangers perceived themselves more similar to each other and showed more conformity to each other after synchronous, rather than a-synchronous stimulation (Miles, Nind, Henderson, & Macrae, 2010; Paladino, Mazurega, Pavani, & Schubert, 2010; Wiltermuth, 2012).

In modern societies however, Durkheim suggested that solidarity is *organic*: here individual complementarity serves as the basis for group formation and the individuality of group members becomes an important consideration in group functioning. Durkheim provides the example of a village composed of different craftsmen. Here, it is the way in which craftsmen complement and build upon each other, rather than the similarity of craftsmen, that provides a sense of solidarity in the village. Complementarity thus refers to the integrated and coordinated actions of individuals who, by virtue of their actions, are quite dissimilar of each other (or to be more precise: distinctive without being antagonistic).

Durkheim's observations can be related to contemporary research showing that interpersonal interaction is also a major predictor of feelings of entitativity and improved interpersonal relations within the group (Gaertner, Iuzzini, Guerrero Witt, & Oriña, 2006; Gaertner & Schopler, 1998; Koudenburg, Postmes, & Gordijn, 2011; 2013a; 2013c, *Chapter 3, 4, 7*; Lickel et al., 2000; Prentice, Miller, & Lightdale, 1994). This can be conceptualized as a bottom-up process in which a common sense of identity is *induced* from group members' individual contributions to the group (Postmes, Haslam et al., 2005; Postmes, Spears et al., 2005; see also Swaab, Postmes, Van Beest, & Spears, 2007).

Further research has shown that also in heterogeneous groups, inductive processes can provide a strong basis for identification (Jans et al., 2011).

In sum, there are two distinct ways in which solidarity can be achieved. One could be termed deductive (or mechanical): overarching similarities in the group influence group members to experience solidarity. This solidarity can be witnessed in different conceptually related indicators of solidarity including entitativity and social identification. Exactly the same indicators of solidarity are affected by a second pathway, which we termed inductive: the complementary actions of individual group members creating a successful community.

In the research by Postmes and colleagues, the process of identity formation is manipulated directly to be either inductive or deductive. The idea behind this is that this creates different types of solidarity, which has consequences for, for instance, the way group members deal with heterogeneity within the group (e.g. Jans et al., 2011, 2012). The present research builds on these prior studies, zooming in on the process of co-action in groups and its consequences for social solidarity. But rather than manipulating identity formation directly, we merely vary the mode of physical interaction between group members: We believe that the physical manifestation of the group shapes the development of a sense of solidarity.

Sense of Personal Value to the Group

One of the differences between mechanical and organic processes of group formation lies in the contributions that individual group members make to it. Durkheim already observed that in organic societies there would be more scope for individuality. Indeed, if group formation is based on member similarity, there is little scope for individuality within the group. Group members should feel mutually replaceable and have little individual value to the group as a whole. For example, the solidarity between soldiers in a platoon is often based upon the principle that all are equal. This is embodied through uniform clothing,

as well as uniform action (e.g., marching, drill exercises). The similarity or replaceability of soldiers in their formation or units could be beneficial for the army's continuity in combat: The loss of individuals would not endanger the performance of a unit so long as their membership could be refreshed. The army and its units were (and to a large extent are) designed so that the loss of individual lives does not endanger the functioning of the organization. In such situations, feelings of solidarity are presumably less anchored in individual features, and based more on group features (platoon, division, branch, nation).

Conversely, when group formation is organic, the actions of individuals in the group are a direct determinant of the physical manifestation of the group. In a conversation, for instance, the flow of talk can only proceed smoothly if speakers organize their speech production and comprehension so that they take turns, reflect upon the other's utterances, etc. (Clark, 1996; Gambi & Pickering, 2011; Wilson & Wilson, 2005). To function as a coherent social unit, the input of all members in such organic group processes is essential: When one person or subgroup was to leave, the group would change. In other words, coordinating who talks when, and building upon what has been said by other speakers allows members to form a coherent social structure (Koudenburg et al., 2013a; 2013c, *Chapter 4, 7*). The structure of an organically formed group, for example as it emerges in a conversation, is based on the complementarity of the individual contributions to the group. Previous research suggested that the recognition of one's distinctive input within the group has positive consequences for personal wellbeing and can enhance a sense of connection (Bettencourt & Sheldon, 2001; Stryker, 1987; Vignoles, Chryssochoou, & Breakwell, 2000). Therefore, we expect that in such organic or complementary structures, the sense of personal value to the group will be an important predictor of an emergent sense of solidarity.

The Present Research

In the present paper we examine whether feelings of solidarity can emerge in the background of group members' coaction. We propose a

model in which coordinated action elicits a sense of solidarity. We measure three aspects of solidarity: First, we examine group members' perceptions of group *entitativity*, i.e. the extent to which they perceive their group as a social unit. Second, we assess the extent to which group members *identify* with the group. Third, we examine the extent to which group members feel that they *belong* to the group. Although it is clear that these three are closely related, we included them because they are central to different schools of thought in group research. Thus, entitativity is an important construct in interdependence research and refers to perceived unity at the collective level. Identification is an important variable in the social identity tradition, and refers to feelings of attachment to the group as an entity. Belongingness, finally, has been examined in research on ostracism and is linked in that literature to individual needs. Although these three concepts stem from distinct conceptual traditions, we believe they all tap into a sense of solidarity within the group. One could hypothesize that the three should be differentially affected by our manipulations. However, in line with the literature review above, we believe that it would be likely for all three variables to be affected in similar ways by coordinated action.

Additionally, we propose that this sense of solidarity emerges quite differently for complementary and uniform actions, respectively. When group members undertake complementary actions, for instance by taking turns in a conversation, a sense of personal value plays an important role. Here, the group's sense of solidarity is founded upon the integration of a unique combination of contributions from individual members. In contrast, when group members undertake uniform actions, such as when talking or singing in synchrony, identification processes are less likely to be influenced by a person's personal value to the group. Therefore, we expect that in the complementary action (turn-taking) condition, but not in the uniform action (synchrony) condition, the emergence of solidarity is mediated by the feeling that one is personally valuable to the group.

In this research, we hypothesize that a) both complementary and uniform action can increase solidarity in the form of increased perceptions of group entitativity, and increased identification with, and belonging to the group, b) a sense of personal value mediates the

relation between complementary action and feelings of solidarity, but not the relation between uniform action and feelings of solidarity, and c) compared to uniform action, complementary action leads to more divergence in a subsequent idea generation task, promoting creativity in groups.

We tested this model in five studies using different methods.⁶ Study 1 examines the general distinction between naturally occurring groups based on uniform action and those based on complementary action. Additionally, in Study 1 we develop a measure of sense of personal value to the group and examine whether it distinguishes between these groups. In Study 2, we manipulate different forms of coordination (synchrony vs. turn-taking) in dyads. We examine whether this leads to solidarity and how each of these forms is related to a sense of personal value. In Study 3, we test the same hypotheses in a different context (i.e., a choir) and with triads. Study 4 aims to replicate Study 2 and 3 in again a different context, namely amongst actors. Importantly, in Study 4 we also investigate the consequences of different social structures for group creativity and idea generation. Finally, Study 5 focuses on alternative explanations for the effects, in particular whether the different amount of effort involved in both forms of coordination may confound the effects. In addition, Study 5 examines whether a sense of personal value is only related to solidarity because individuals value themselves, or whether the value of others may also contribute to the emergent sense of solidarity.

five

Study 1

In Study 1, we examined whether people would recognize both processes in group settings that naturally occurred in their daily life, and we examined what associations they had with these different settings. We asked participants to remember social experiences from their personal life in which they performed complementary actions or uniform actions. It was hypothesized that both situations promote equal

⁶ We performed 5 studies in this line of research. All studies are reported in the present paper.

levels of entitativity, identification, and belonging (H1), that a sense of personal value to the group is higher in the complementary action condition than in the uniform action condition (H2), and that this sense of personal value mediates the effect on the indicators of solidarity in the complementary, but not in the uniform action condition (H3).

Methods

The sample consisted of 199 participants ($M_{age} = 21.01$, $SD = 6.85$, 74% female) who were recruited via the undergraduate participant pool at the university of Groningen ($n = 164$), or via various online forums ($n = 35$). Undergraduates participated for partial course credit; the other participants were volunteers. Participants were randomly assigned to the conditions of a study in which coordination (uniform action vs. complementary action) was manipulated by remembering a situation in which they behaved similarly or complementary to others.

Procedure. Participants filled out an online questionnaire on 'social situations'. They were asked to think back to a group setting. In the uniform action condition it was stated: "Sometimes group members all perform actions that are roughly similar. Please take your time to think back to a situation in which you did something together with other people, and in which everyone acted more or less similarly." In the complementary action condition participants read "Sometimes group members all perform different actions. Please take your time to think back of a situation in which you did something together with other people, and in which everyone had a unique input." Participants were then asked whether they recognized this kind of situation, and to describe such a situation from their own experience. The recalled experiences were coded by a trained coder, who was blind to the conditions of the study. Subsequently, participants were asked to fill out a questionnaire about this experience.

Dependent variables. The questionnaire assessed participants' sense of personal value to the group. We developed a measure consisting of three items; "I had an important role in this group", "I think I was indispensable to this group", "Without me, this group would not function", and found this to have adequate reliability, Cronbach's $\alpha = .87$.

In addition, participants completed a 4-item entitativity scale (Jans et al., 2011, e.g. "I feel that the others and I are a unit", $\alpha = .91$) and a 14-item social identification scale (Leach et al., 2008, $\alpha = .94$). Feelings of belonging were measured by 4 items derived from the Need Threat Scale (Van Beest & Williams, 2008, e.g. "During the task I felt that I belonged with the others" $\alpha = .89$). As manipulation checks, participants indicated the extent to which they agreed with four items: In this situation "Everyone did something different", "Every group member had a different input" (*action complementarity*: $\alpha = .84$), and in this situation "Everyone acted the same", "All group members had the same input" (*action uniformity*: $\alpha = .78$).

Results

Seven participants were unable to remember a situation and their data were removed before the analyses (N complementary action condition = 5, N uniform action condition = 2). No outliers (Studentized Residuals > 3) were detected. An analysis of variance (ANOVA) on the manipulation check revealed that group members perceived the situation that they reported to have more action complementarity in the complementary action condition than in the uniform action condition: $M = 5.21$, $SD = 1.09$ and $M = 3.43$, $SD = 1.51$ respectively, $F(1, 185) = 85.32$, $p < .001$, $\eta^2 = .32$. Conversely, group members perceived the situation that they reported to have less action uniformity in the complementary action condition than in the uniform action condition: $M = 3.14$, $SD = 1.32$ and $M = 4.70$, $SD = 1.32$ respectively, $F(1, 185) = 65.03$, $p < .001$, $\eta^2 = .32$.

Description of situations. In the uniform action condition, participants mentioned behaviors such as playing sports and games (23%), going to a party, including behaviors such as dancing (7%), eating or drinking (13%), and chatting or laughing (12%). In addition, they mentioned situations which were characterized by some form of conformity to the group (14%), e.g. "The first time I went smoking, I smoked because everybody else did", "During a hazing ritual we all acted similarly (for instance when eating or singing) because we were

told to”, “We once went to a shop where we all bought something healthy, just because we did not want to look stupid”.

In the complementary action condition, participants mentioned things that involved organizing an activity or event (34%) including things like “everyone painted a different part of the house”, “We organized a New Year’s Eve party, and everyone had their own task. One organized the drinks; someone else arranged a location, etc.” In addition, participants mentioned making a school- or work assignment (33%), and sports or games that were characterized by a distinct input of each player (7%).

Table 5.1 Means (SD’s) for the dependent variables in Study 1.

	Similarity (n = 99)	Complementarity (n = 93)
Personal Value	3.45 (1.48)	4.12 (1.45)
Entitativity	5.28 (1.23)	5.05 (1.31)
Belonging	5.54 (1.13)	5.39 (1.07)
Identification*	4.73 (1.18)	4.79 (1.14)

Note. For Identification there were 3 missing values.

Dependent variables. As predicted, participants had a stronger sense of personal value in the complementary action condition than in uniform action condition, $F(1, 190) = 9.83, p = .002, \eta^2 = .05$. In line with the predictions, no differences in perceived entitativity ($F(1, 190) = 1.49, ns$), feelings of belonging ($F < 1, ns$) and identification ($F < .1, ns$) were found. Means are summarized in Table 5.1.

Indirect effect. As expected, we did not find differences between conditions on the indicators of solidarity. However, we predicted that a sense of personal value to the group would explain solidarity in the complementary action condition, but not in the uniform action condition. To test this, we estimated the indirect effect of complementary action (vs. uniform action) via personal value on

perceived entitativity, identification, and belonging using the bootstrapping procedure developed by Hayes (2012). The effect size of the indirect effect is indicated by K^2 (Preacher & Kelley, 2011). The analyses revealed an indirect effect of condition via personal value on identification ($B = .13$, $SE = .06$, 95% bootstrapped CI [.04; .28], $K^2 = .06$), perceived entitativity ($B = .24$, $SE = .09$, 95% bootstrapped CI [.09; .44], $K^2 = .10$), and belonging, ($B = .21$, $SE = .08$, 95% bootstrapped CI [.08; .39], $K^2 = .11$). When modeling this effect, the direct effect of complementary action on perceived entitativity became negative, $B = -.46$, $SE = .17$, $t = -2.69$, $p = .01$, a suppression effect suggesting that a sense of personal value contributes to why perceptions of entitativity in complementary groups are as high as in uniform action groups. A similar negative direct effect appeared for belonging, after modeling the effect of personal value, $B = -.36$, $SE = .15$, $t = -2.41$, $p = .02$. No direct effect of condition on identification was found ($t < 1$, *ns*).

Discussion

Study 1 shows that in recollections of real-life group situations, high complementarity was associated with situations that are descriptively very distinct from high uniformity. Uniformity evoked a broad range of situations revolving around shared social activities whose main purpose appears to be communal enjoyment (e.g., having fun through socially scripted and symbolic forms of interaction). Complementarity evoked situations that were much more instrumental and focused on achievement of some common goal (e.g., collaborative work to achieve some desirable outcome). Despite the marked difference between both kinds of activities recalled, they were associated with approximately equal levels of perceived group entitativity, experienced belonging and identification. However, in complementary situations group members recalled a sense of personal value, and this predicted their feelings of solidarity.

Although we find Study 1 of descriptive interest and suggestive of the social processes that are central to this paper, we believe that for various reasons (the correlational nature of the data, the inability to control for confounds, the reliance on explicit recollection for tapping

into processes that might be of an implicit nature) we cannot draw any firm conclusions. Study 2 therefore experimentally studied the emergence of a shared identity “in the background” of a particular dyadic activity that participants were asked to perform. In order to examine whether feelings of solidarity would emerge as a result of the co-action, a control condition was included in Study 2.

Study 2

five

Methods

Seventy-six undergraduate students ($M_{age} = 19.08$, $SD = 1.68$, 66 female, 10 male) participated in a study for partial course credit or a single reward of 5 euros.⁷ Previously unacquainted dyads were randomly assigned to one of 3 conditions (control vs. synchrony vs. turn-taking).^{8,9}

Procedure. Participants entered the lab individually and were seated in separate cubicles after which they were assigned to a partner. After filling out an informed consent form, participants were instructed to read a story through headsets together with their assigned partner. The story was one page long and concerned a man who visited a

⁷ The sample size in each of the following studies was based on a minimum of 20-25 per condition (cf. Simmons, Nelson, and Simonsohn, 2011). Because this is dyadic or triadic data, however, individual studies may still be somewhat underpowered if intraclass correlations (ICC) are very high.

⁸ Two dyads knew each other beforehand. Analyzing the data without these two dyads yielded similar results.

⁹ This research builds on prior research (e.g., Koudenburg et al., 2011a) that examines the impact of smoothly coordinated interaction to various control conditions, including a condition in which interactions are disrupted by silences. Accordingly, this first experimental study contained two conditions in which we attempted to disrupt group collaborations by brief delays in auditory feedback. But this disruption manipulation failed: In the turn-taking condition a short delay disrupted interaction in the predicted way, but in the synchronous interaction condition it caused complete breakdown of interaction in several groups. Because this means that delay conditions are no longer equivalent and comparable and because these conditions are not relevant for the current paper, we decided not to report them. In addition, the dependent variables reported in the paper were embedded in a larger questionnaire, which contains additional variables (see Koudenburg et al., 2011a). We have only reported the most central dependent variables here, but the full set of results is available from the first author.

restaurant. In the synchrony condition, participants were instructed to read the story simultaneously (in sync) with their partner. In the turn-taking condition, participants read the sentences of the story in turn. In the control condition, participants read the story and were informed that their partner was reading the story in the next cubicle. It took dyads about 5 minutes to read the whole story. After reading, participants took off their headsets and filled in a questionnaire. Finally, participants were fully debriefed and thanked for their participation.

Dependent variables. Participants' sense of personal value to the dyad ($\alpha = .78$), entitativity ($\alpha = .93$), and belonging ($\alpha = .96$) were measured as in Study 1. Identification was assessed with three subscales of the Leach et al. identification scale (2008, $\alpha = .92$): Solidarity ($\alpha = .93$), satisfaction ($\alpha = .90$) and homogeneity ($\alpha = .88$). Because the groups consisted of only two members, the self-stereotyping subscale was deemed less relevant. In addition, because these were newly formed dyads, we thought that questions about the centrality of the group to the individuals' identity would not make any sense to some of the participants. Therefore, we did not measure these identification subscales.

Results

Two orthogonal Helmert contrasts were specified: ψ_1 differentiated between coordinated interaction (synchrony and turn-taking) and the control condition. ψ_2 differentiated between the synchrony and the turn-taking condition. The intra-class correlations (ICC1; Bliese, 2000) for entitativity (.54), identification (.61), belonging (.80) suggested that multilevel analysis was required. The sense of personal value had a much lower ICC1 (.03), which is consistent with the idea that this is an assessment of distinctiveness made at the individual level. To account for the interdependence of the data, we used Hierarchical Multilevel Analysis. Means are summarized in Table 5.2.

Solidarity. Individual-level perceptions of entitativity, belonging and identification were regressed onto dyad-level contrasts ψ_1 and ψ_2 . The analysis showed that participants who had a coordinated interaction perceived their dyad to be more entitative than participants in the

control condition, $\psi_1: \gamma = 2.02, SE = .30, t(36) = 6.67, p < .001$. In addition, participants in the turn-taking condition perceived their dyad to be more entitative than those in the synchrony condition, $\psi_2: \gamma = .76, SE = .32, t(36) = 2.40, p = .022$.

Similarly, participants who had a coordinated interaction felt more belonging to the group than participants in the control condition, $\psi_1: \gamma = 3.28, SE = .26, t(36) = 12.68, p < .001$. In addition, participants in the turn-taking condition felt that they belonged more to the group than those in the synchrony condition, $\psi_2: \gamma = .69, SE = .27, t(36) = 2.53, p = .016$.

Finally, participants in the coordinated interaction conditions identified stronger with their dyad than participants in the control condition, $\psi_1: \gamma = 1.80, SE = .26, t(36) = 6.85, p < .001$. No difference was found between the turn-taking and the synchrony condition ($\psi_2: t < 1$).

Personal value to the dyad. A similar analysis showed no significant effect of ψ_1 on sense of personal value to the dyad: $\gamma = .52, SE = .33, t(36) = 1.56, p = .13$, although mean scores on personal value were somewhat higher in the interaction conditions than in the control condition. In addition, ψ_2 did not significantly affect participants' sense of personal value, $\gamma = .58, SE = .35, t(36) = 1.63, p = .11$, but means were in the predicted direction: Participants in the turn-taking condition had a somewhat higher sense of personal value than those in the synchrony condition.

Table 5.2 Means (SD's) for the dependent variables in Study 2.

	Control (n = 21)	Synchrony (n = 28)	Turn-taking (n = 27)
Personal value	3.46 (1.53)	3.70 (1.16)	4.27 (1.25)
Entitativity	2.55 (1.09)	4.18 (1.14)	4.94 (1.00)
Belonging	2.17 (.86)	5.10 (1.07)	5.78 (.71)
Identification	2.84 (.89)	4.49 (.91)	4.76 (.89)

Process. We hypothesized that in the turn-taking condition, but not in the synchrony condition feelings of solidarity would be predicted by the extent to which people had a sense of personal value to the dyad. This hypothesis received some support from the correlational data (see Table 5.3). Participants' sense of personal value was related to entitativity, belonging and identification in the turn-taking condition, but not in the synchrony condition.

Table 5.3 Multilevel regression coefficients per condition in Study 2. Entitativity, belonging and identification are regressed upon a sense of personal value to the group.

	Control	Synchrony	Turn-taking
Entitativity	.51*** (.12)	.04 (.17)	.45*** (.12)
Belonging	.17 (.12)	.03 (.15)	.27** (.10)
Identification	.25* (.12)	.10 (.11)	.30* (.12)

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

Study 2 showed that having a coordinated interaction with a partner increased feelings of solidarity. Participants who read a story together perceived their dyad to be more entitative, felt that they belonged more, and identified more with their dyad than participants in a control condition. In addition, participants who read the story by taking turns with the other member of their dyad reported slightly higher perceptions of entitativity and higher

levels of belonging than those who read the story in synchrony. This was an unexpected finding suggesting that, if anything, complementary action led to slightly stronger perceptions of solidarity than synchronous action did. No significant effects of the different ways of coordinating speech on identification were found.

It was hypothesized that participants' sense of personal value would increase when taking turns, rather than reading in synchrony. The data

did not support this hypothesis, although the means were in the predicted direction. However, it is quite likely that a dyad is too small for members to negate personal value to the group: Indeed, in order to consider a dyad a “group” (even in the synchrony condition) requires both participants: A group of one is not typically considered a group. Study 3 therefore examined groups of three participants to account for this limitation.

Although the degree to which participants had a sense of personal value was not directly influenced by the speech coordination manipulation, for participants who took turns their sense of personal value was highly related to the measures of solidarity. In contrast, for those who read in synchrony we found no relation between sense of personal value and the measures of solidarity. Results are thus at least somewhat consistent with the idea that personal value can create a sense of solidarity on a basis very distinct from the homogeneity beliefs that are often assumed to be central to social identity formation (cf. Jans, Postmes, & Van der Zee, 2012).

Study 3

Because speaking in synchrony is a more uncommon activity than speaking in turns, we wanted to replicate these findings across several settings. One such context in which synchronous and turn-taking group activities can be compared is singing. The activity of singing together has often been suggested to increase a sense of togetherness (Durkheim, 1954; Anderson, 1991; Bellah, 2006). Indeed, many groups, such as sororities, churches, and tribes use singing in their activities, pointing to the symbolic relevance of this group activity. Research on singing has (to our best knowledge) almost exclusively focused on the act of singing in unison (Anderson, 1991). However, singing often also occurs in more complementary forms where multiple voices can be discerned, for example in part-singing, in duets or in canon. The present study contrasted singing in unison to complementary singing. We reasoned both would lead to an increased sense of solidarity to the group, but that the role of individuality in the process would be very different.

Methods

Thirty-one singers ($M_{age} = 40.49$, $SD = 15.89$, range 14-65; 6 male, 25 female) participated voluntarily in a field-study advertised to be about “singing together”. Participants were informed about the study via their choirs, their singing teachers, or posters in the music institute and signed up for the study individually. All participants participated voluntarily. After arrival at the music institute, participants consecutively went through all three conditions (control vs. synchrony vs. turn-taking) in random order, each time with a different group of two or three singers. Thus, for each round, participants were randomly assigned to groups, which were randomly assigned to one of three conditions.

In each of the conditions participants were asked to sing the song *Use Somebody* (written by the Kings of Leon). Three days before the study, participants received the lyrics and a link to the vocal and piano version of the song (performed by Laura Jansen). In the synchrony condition, members of the group were instructed to sing the song simultaneously, in unison. In the turn-taking condition, members were instructed to sing the song by taking turns. In the control condition, each group member was instructed to sing the first two verses of the song solo, in presence of the other group members. In each condition, the singers were accompanied by a piano.

After each round, participants filled out a questionnaire assessing their sense of personal value to the group ($\alpha = .84$), perceptions of entitativity ($\alpha = .90$), and feelings of belonging ($\alpha = .84$) similar to previous studies.¹⁰ Additionally, participants indicated the extent to which they felt that they had a *voice* in the group, with 5 items: “I had the ability to make my own voice heard”, “I dared to make my own voice heard”, “I could be myself in the group”, “I could be different than others in this group”, “I tried to make my own voice heard”, $\alpha = .79$.

In order to not make it too apparent to participants that the study was concerned with people’s feelings of solidarity, these questions were

¹⁰ Because the design of Study 3 required that participants filled out the same questionnaire three times, we reduced the length of the questionnaire by not including a measure of identification.

embedded in a larger list of filler items about various aspects of the singing, e.g., the perceived aesthetics of the performance, various feelings aroused by the singing, etc. After the third round of questionnaires, participants were fully debriefed and had the opportunity to ask questions.

Results

Again, two contrasts were specified to differentiate between conditions in which participants were singing together and the control 'solo' condition (ψ_1), and between the synchrony and the turn-taking condition (ψ_2). Hierarchical Multilevel Analysis with Cross-classified effect modeling was used to correct for the interdependence of the data. The outcomes were measured at level 1. This level was nested within individuals (each individual participated 3 times), and within groups (each group consisted of three individuals).^{11,12} Because of the nested structure of our model and the small sample size, we decided not to exclude outliers.¹³ Means are summarized in Table 5.4. The within participant ICC1s for personal value to the group (.66), entitativity (.39), belonging (.04), and voice (.51) indicated that we needed to correct for interdependence of the data on the individual level. Within groups, the ICC1s for personal value to the group (.07) and voice (.07) were quite low, but the ICC1s for entitativity (.14) and belonging (.12) indicated that there was variance that could be explained at the group level.

Solidarity. A regression including both contrasts at the group-level was performed to predict measurement-level entitativity with the group, while correcting for the level of the individual. No between-condition differences were found for perceptions of entitativity, ψ_1 : $t <$

¹¹ We found no influence of order (whether it was the first, second, or third round of the experiment).

¹² In theory, one could also model the influences of group members in the previous round, on the individual outcomes of the next round. However, to reduce complexity, we did not include these models.

¹³ When screening for multilevel outliers, two outliers appeared. Because these participants appeared normal on the other measures, and we preferred not to remove single measurements from our dataset, we decided to test our hypotheses both with and without outliers. No differences emerged, (except for a marginal effect of ψ_2 on entitativity: $\beta = -.43$, $SE = .26$, $t(86) = -1.67$, $p = .10$), and reported the data with all cases included.

1, *ns*, and ψ_2 : $t < 1$, *ns*. A similar analysis on feelings of belonging showed the predicted effect: Participants who were singing together (either in synchrony or by taking turns) experienced higher feelings of belonging than participants in the control condition ψ_1 : $\beta = .64$, $SE = .29$, $t(88) = 2.24$, $p = .03$. No differences between the synchrony and turn-taking condition were found, ψ_2 : $t < 1$, *ns*.

Personal value to the group. No effects of ψ_1 on sense of personal value to the group were found, $t < 1$, *ns*. However, on ψ_2 , a marginally significant effect in the predicted direction was found: Participants in the turn-taking condition felt they had a somewhat higher personal value to the group than those in the synchrony condition, $\beta = .45$, $SE = .26$, $t(88) = 1.76$, $p = .08$.

Voice. Participants perceived that they had more voice in the control condition, than in the conditions in which they sang together, ψ_1 : $\beta = -.47$, $SE = .14$, $t(88) = -3.38$, $p = .001$. In addition, A marginal effect on ψ_2 showed that participants in the turn-taking condition felt that they had somewhat more voice than those in the synchrony condition, $\beta = .26$, $SE = .16$, $t(88) = 1.68$, $p = .096$.

Table 5.4 Means (SD's) per condition for the dependent variables in Study 3.

	Solo (n = 29)	Synchrony (n = 31)	Turn-taking (n = 31)
Personal value	4.26 (1.37)	3.91 (1.46)	4.38 (1.93)
Belonging	4.47 (1.31)	5.04 (1.24)	5.12 (1.22)
Entitativity	4.01 (1.37)	4.37 (1.49)	4.10 (1.18)
Voice	6.01 (.81)	5.38 (.87)	5.65 (1.07)

Process. We examined whether feelings of belonging and perceptions of entitativity could be predicted by sense of personal value

to the group.¹⁴ Cross-classified multilevel regressions indicated that a sense of personal value predicts both entitativity ($\theta = .18, SE = .09, t(89) = 1.96, p = .052$), and belonging ($\theta = .28, SE = .08, t(89) = 3.74, p = .001$). Voice predicts belonging ($\theta = .31, SE = .14, t(89) = 2.30, p = .024$) but does not significantly predict entitativity ($\theta = -.11, SE = .15, t < 1, ns$). Finally, voice was related to a sense of personal value, $\theta = .87, SE = .12, t(89) = 6.76, p < .001$.

Discussion

Study 3 shows that singing together, compared to singing alone, increases feelings of belonging. Perceptions of entitativity do not change as a result of the way of singing. The data reveal a marginal effect suggesting that compared to singing in unison, singing in turns increases a sense of personal value to the group. These feelings are related to a sense of belonging and perceptions of entitativity. Together these results indicate that singing in a complementary fashion can elicit feelings of belonging and entitativity up to a level similar as singing in unison, possibly because of an increased sense of personal value to the group.

Comparable to the results on personal value, Study 3 showed that participants felt that they had more *voice* in the turn-taking condition, than in the synchrony condition. The variable voice related to the extent to which people felt that they could make their own voice heard. However, whereas a sense of personal value to the group was related perceptions of group entitativity, voice appeared to be unrelated to group entitativity. This possibly suggests that feelings of group unity may depend less on being given scope for independent action than on making a recognizable contribution to a group product.

In Study 3, we did not find that singing together increased entitativity compared to a control condition in which participants were singing solo. Possibly, the experience of singing solo in the presence of others emphasized the relation between singer and 'audience', therefore eliciting a sense of entitativity in itself. Supporting this idea, we found

¹⁴ Because of the complex structure of our model, we decided not to examine mediation.

that a sense of personal value to the group in the solo condition was almost as high as in the turn-taking condition, suggesting that participants may have experienced some form of complementarity when singing solo. This was a limitation, because Study 3 now lacked a 'true' control condition to which the effects on entitativity could be compared. In Study 4 we therefore included a control condition for which the development of different actor-audience relations would be less likely.

Study 4

Together, the first three studies suggest that a sense of solidarity can emerge through co-action. The results also show that complementary actions elicit a structure that is qualitatively different from uniform action with regard to the position of the individual. Study 4 focuses on the consequences of these different forms of solidarity for the level of divergence within groups.

Convergence and divergence within groups

In social structures in which similarity is the defining feature of the group, behavior that deviates from the norm is a problem to the internal cohesion of the group. Indeed, research suggests that in such groups, norm deviations are experienced as threats to the distinctiveness of the own group with regard to other groups and therefore often elicit punishment (Festinger & Thibaut, 1951; Marques & Paez, 1994).

Research has shown that such a search for consensus can lead to a convergent style of thinking, in which group members are likely to concentrate on the proposed viewpoint to the exclusion of other considerations (Nemeth, 1986; Nemeth & Kwan, 1987; Stasser, Taylor, & Hannah, 1989). For instance, they are likely to discuss information that is already shared among group members, rather than bring new facts to the table (Stasser, 1988).

Whereas groups that are based on member similarities are likely to think in a convergent manner, groups based on complementarity may not function in a similar way. For instance, when members are assigned expert roles, this can lead to more coordinated information sharing, in which members mutually recognize each other's responsibility for specific domains of information (Stasser, Stewart, & Wittenbaum, 1995). Similarly, norms that promote individualism, originality or critical thought can decrease sanctions against dissenting group members (Hornsey, Jetten, McAuliffe, & Hogg, 2006; Moscovici & Lage, 1978; Postmes, Spears, & Cihangir, 2001). Taking this a step further, this research suggests that in groups that are based on individual contributions, voicing dissimilar opinions may be less harmful for the group's social identity. After all, it is not their distinctiveness from other groups that informs members about who they are as a group, but rather the individual coordination amongst members that promotes a sense of solidarity. In line with this reasoning, exposure to minority viewpoints has been shown to elicit more divergent thought (Nemeth, 1986) and heterogeneous groups have been suggested to be more effective in problem solving than homogeneous groups (Hoffman & Maier, 1961, but see Mannix & Neale, 2005 for a review of different effects of different types of heterogeneity).

Taking this together, Study 4 tests the hypothesis that groups based on complementarity are more likely to think in a divergent manner than groups that are based on uniformity. That is, we expect complementary action to increase the generation of both more ideas (fluency) and more original ideas (originality), which are argued to contribute to creativity, problem solving and decision-making (Guilford, 1956; Nemeth, 1986).

Coordinated action in theatre

In Study 4, we made use of actors to read out a text in synchrony or in turns. Actors were chosen because both forms of synchronous speech and turn-taking are naturally occurring in plays as well as in practice sessions. In fact, in ancient Greek tragedies or comedies, synchronous speaking in *unison* is a normal occurrence: It is the mode in which the chorus observes and comments on the action of the actors. Interesting

to note is that in Greek drama, the chorus often repeats portions of the text that have also appeared in dialogue. It has been suggested that this “vox populi” affirms the statements made by individuals through the public and renders it truthful (a form of social validation, in other words; Back, 1988). A contemporary version of synchronous speech is often incorporated in modern plays, such as musicals or grand operas and this form is a well-rehearsed aspect of actors’ training.

Method

Ninety-three actors ($M_{age} = 22$, $SD = 4.61$, 57 female, 36 male) participated in groups of three in a field study for a single reward of 5 euros. Groups were randomly assigned to the conditions of a study in which interpersonal coordination was manipulated (synchronous vs. turn-taking vs. control) by reading a poem.

Participants were recruited at different professional and amateur theater companies and schools. After filling out the informed consent form participants of all groups were instructed to recite the Dutch translation of the poem *The Raven* by *Edgar Allan Poe*. In the synchrony condition, participants were instructed to recite the poem simultaneously with the other participants, in the same rhythm. In the turn-taking condition, they were instructed to recite the sentences of the poem in turn. In the control condition, participants were instructed to recite the poem, independently of each other. Participants did not synchronize in this condition. Afterwards, they completed a questionnaire assessing their sense of personal value to the group ($\alpha = .80$), perceptions of entitativity ($\alpha = .85$), feelings of belonging ($\alpha = .80$) and identification ($\alpha = .92$) in the same way as in Study 2. Finally, participants were fully debriefed.

Group creativity task. After filling out the questionnaire, all groups received the instructions for a group creativity task. They were asked to write a promotion plan for a theater play of *Romeo and Juliet* (Shakespeare). Groups were asked to discuss how to handle the promotion, and to write down their plan on an A4-paper. They were given 15 min to complete the task, and during this time the

experimenter left the room. The group task was videotaped for later analysis.

Results

As in Study 2, two contrasts were specified: ψ_1 differentiated between coordinated interaction (synchrony and turn-taking) and no coordinated interaction (control), ψ_2 differentiated between the synchrony and the turn-taking condition. The ICC1's for entitativity (.43), identification (.47), belonging (.39) and sense of personal value to the group (.15) suggested that multilevel analysis was needed. One multilevel outlier was removed (Standardized residual on one of the dependent variables > 3). Means are summarized in Table 5.5.

Solidarity. A multilevel regression included both contrasts as group-level predictors for individual-level identification with the group. A marginally significant effect of ψ_1 was found, indicating that participants who had a coordinated interaction identified more with the group than participants in the control condition, $\gamma = .61$, $SE = .31$, $t(28) = 1.99$, $p = .056$. No significant effect of ψ_2 on identification was found, $\gamma = .48$, $SE = .35$, $t(28) = 1.39$, $p = .18$, although means were somewhat higher in the turn-taking than in the synchrony condition. A similar regression on feelings of belonging revealed that coordinated interaction increased feelings of belonging compared with the control condition, ψ_1 : $\gamma = 1.38$, $SE = .24$, $t(28) = 5.73$, $p < .001$. ψ_2 did not significantly affect belonging, $\gamma = -.01$, $t < 1$, *ns*. Moreover, coordinated interaction led to higher perceived entitativity compared with the control condition, ψ_1 : $\gamma = 1.25$, $SE = .32$, $t(28) = 3.91$, $p = .001$. ψ_2 did not significantly affect entitativity, $\gamma = .03$, $t < 1$, *ns*.

Personal value to the group. Results showed that participants who had a coordinated interaction (either in synchrony or by taking-turns) reported higher feelings of personal value to the group than participants in the control condition, ψ_1 : $\gamma = .70$, $SE = .30$, $t(28) = 2.32$, $p = .03$. Importantly, ψ_2 also significantly affected participants' sense of personal value, $\gamma = .78$, $SE = .34$, $t(28) = 2.31$, $p = .03$, such that participants in the turn-taking condition had a higher sense of personal value to the group than participants in the synchrony condition.

Mediation. We tested two different mediation hypotheses: One for the indirect effect of synchrony (vs. control, dummy D1) through a sense of personal value on the indicators of solidarity; and one testing the same effect for turn-taking (vs. control, dummy D2). This was a multilevel mediation: *Condition* was a group level (2) variable, which predicted *sense of personal value to the group* and *entitativity, belonging, and identification* at the individual level (1). We followed guidelines provided by Preacher, Zyphur, and Zhang (2010) for conducting a 2-1-1 multilevel mediation. As predicted, there was no evidence for mediation of the synchrony condition effect, via personal value, on identification ($\gamma = 0.66$, $SE = 0.66$, $t(28) = 1.00$, *ns*), nor on entitativity ($\gamma = 0.55$, $SE = 0.52$, $t(28) = 1.07$, *ns*), nor on belonging ($\gamma = 0.07$, $SE = 1.51$, $t(28) = .04$, *ns*). However, the effect of turn-taking (D2) via personal value on identification was significant, $\gamma = 2.34$, $SE = 1.06$, $t(28) = 2.20$, $p = .03$, 95% CI [.26; 4.42], as was the mediation effect on entitativity, $\gamma = 1.94$, $SE = .80$, $t(28) = 2.44$, $p = .015$, 95% CI [.38; 3.49].¹⁵ No evidence for a mediation of the effect on belonging was found, $\gamma = .23$, $SE = 5.34$, $t < 1$, *ns*. As hypothesized, in the turn-taking condition, but not in the synchrony condition, participants' sense of personal value to the group predicted identification and the degree to which the group was perceived as an entity.

Creativity. The videotapes of the group task were coded by two independent coders. They coded for the number of unique ideas that were generated by the group. Afterwards, each idea was coded for originality on a scale from 1 = not original, to 5 = very original. Ideas were unoriginal when they were often mentioned across groups or commonly known. Original ideas were defined as rare, unusual and/or radical ideas (Rietzschel, Nijstad, & Stroebe, 2007). The number of original ideas was defined as the number of ideas that was rated with a 3 or higher on originality (Paulus, Kohn, & Arditto, 2011). The interrater reliability (McGraw & Wong, 1996) for the number of ideas was .80, $p < .001$; for the originality of ideas .69, $p < .001$ and for the number of original ideas per group .61, $p < .001$. This can be interpreted as a

¹⁵ Mediation could also be tested by including the original contrasts as predictors. The results of this analysis were similar, but we decided to report the dummy-variables here to facilitate interpretation.

medium to strong agreement between the raters (LeBreton & Senter, 2008). The scores of the two raters were averaged before analysis; means are summarized in Table 5.5.

Because the ideas were generated in groups, the data was analyzed only at the group level. No effect was found for ψ_1 , suggesting that a coordinated interaction did not increase idea generation, $b = -1.11$, *ns*, nor did it increase the number or original ideas created, $b = -1.62$, *ns*. However, a trend was found on ψ_2 , showing that groups in the turn-taking condition generated somewhat more ideas than those in the synchrony condition, $b = 3.48$, $SE = 2.32$, $t(28) = 1.50$, $p = .145$, $\eta^2 = .08$. Moreover, groups in the turn-taking condition generated a marginally higher number of original ideas than those in the synchrony condition, ψ_2 : $b = 3.51$, $SE = 1.84$, $t(28) = 1.91$, $p = .066$, $\eta^2 = .12$.

Table 5.5 Means (SD's) per condition for the dependent variables in Study 4.

	Control (n = 29)	Synchrony (n = 30)	Turn-taking (n = 33)
Personal value	2.72 (1.32)	3.03 (1.22)	3.82 (1.46)
Identification	4.62 (1.05)	4.99 (1.04)	5.47 (.89)
Entitativity	3.45 (1.16)	4.68 (1.20)	4.70 (1.00)
Belonging	3.93 (1.23)	5.32 (.83)	5.30 (.76)

Idea generation task (group level)

	Control (n = 10)	Synchrony (n = 10)	Turn-taking (n = 11)
Fluency	18.55 (3.89)	15.70 (5.11)	19.18 (6.47)
Number of original ideas	9.30 (2.74)	6.85 (4.24)	10.36 (5.16)

Discussion

Results show that reading a poem in a coordinated way increased group members' identification with the group, as well as their perceptions of entitativity and feelings of belonging compared to participants in a control condition. Turn-taking increased group members' sense of personal value to the group, thereby increasing their levels of identification and perceptions of entitativity. Participants who read in synchrony, on the other hand, felt equally valuable to the group to those in the control condition. Thus, when participants were allowed to contribute their unique individual lines in the recital of the poem, this not only augmented their sense of personal value to the group, but also increased their sense of solidarity within the group.

We reasoned that the different structure of the groups and the different room for distinct individual contributions could have consequences for the creativity of these groups. The results show that coordinated communication in itself does not increase fluency or originality in an idea generation task. However, a trend suggested that the structure of communication does make a small difference for subsequent collaboration: Groups in which individuals took turns tended to generate a few more ideas, and in particular more original ideas on a subsequent task, than groups which initially spoke in synchrony. This suggests that groups that are structured around the idea that each individual has a unique value to the group, may show a slight increase in divergent and creative thinking.

Study 5

The purpose of Study 5 was to devote attention to two additional issues. We examined an alternative explanation for the equal (or in Study 2 somewhat higher) feelings of solidarity in the turn-taking condition: Talking sequentially could be less effortful than the synchronous communication.¹⁶ Research on fluency has shown that the

¹⁶ It could also be hypothesized that efforts would be reduced in the synchrony condition, following for instance the literature on social loafing (Karau & Williams,

subjective ease with which people process information influences their judgment on a range of social dimensions (e.g. liking, truthfulness, etc.; see Alter & Oppenheimer, 2009 for a review). Extrapolating from this, it is possible that the relative ease of the turn-taking task in comparison to the synchrony tasks (at least in Study 2 and 4) increased feelings of solidarity in this condition. In Study 5, this alternative explanation was examined by adding a condition in which turn-taking was made more effortful. If feelings of solidarity were to be caused by the ease of turn-taking, rather than by the complementary coaction itself as we hypothesized, this should be reflected by higher levels of solidarity in the turn-taking low effort condition, compared to the turn-taking high effort condition.

In addition, Study 5 examined whether a sense of personal value was solely important to solidarity because of self-investment, or whether the value of *other* group members would similarly play a role in the development of a sense of solidarity. Conceptually, this would be quite important to know: If the value of *others* were to play a role in emergent sense of solidarity in complementary collaborations, this would be direct evidence that the process of creating solidarity is not entirely self-centered, but that it is a group process, in which contributions of others play a role as well.

Methods

Participants were 150 undergraduate students ($M_{age} = 19.48$, $SD = 2.41$, 75% female) who participated in triads ($n = 40$) or dyads ($n = 15$) in a field study for partial course credit or a single reward of 6 euros. Groups were randomly assigned to the conditions of a study in which interpersonal coordination was manipulated (synchronous vs. turn-taking normal effort vs. turn-taking high effort) by reading a poem.

Participants were seated around a table behind individual laptops. After filling out the informed consent form, participants of all groups were instructed to read a fragment of the poem “*Mei*” (Dutch for “May”)

1993). However, as turn-taking represents a more frequently occurring situation, we expected people to be very accustomed to this version of the task, which therefore requires less effort.

by *Herman Gorter*. Participants were instructed to recite the poem from their computer screen. Sentences turned red at the moment they were supposed to be recited by the participant. In the synchrony condition, participants were instructed to recite the poem simultaneously with the other participants, in the same rhythm. In both turn-taking conditions, participants were instructed to take turns when reciting the lines of the poem. However, the computer was programmed such that in the normal effort turn-taking condition sentences turned red in a rhythm that would allow for smooth transition of speaking turns. However, in the high effort turn-taking condition, the sentences turned red in an unpredictable and disordered rhythm. In order to have a coordinated interaction (i.e. without interruptions), participants needed to be alert to changes in rhythm and adjust their speech tempo to the others.¹⁷

Before starting, participants were given the time to read the poem, then listened to an audiotape of the first two verses of the poem, and finally engaged in a practice session. The practice session involved reading the first two verses following the instruction for the assigned condition. Afterwards, participants completed a questionnaire on their laptops containing measures of entitativity ($\alpha = .83$), belonging ($\alpha = .85$), identification (all subscales except for the centrality subscale, $\alpha = .93$), and sense of personal value to the group ($\alpha = .87$). Furthermore, we added three rephrased personal value questions to examine the degree to which participants felt that each of the *other* group members was of value to the group (e.g. “*I think the person on my right/left is indispensable to the group*”). Scores correlated highly for both other group members ($r = .80$), and were therefore combined. The total scale of *perceived value of others to the group* had a high reliability ($\alpha = .91$). To assess the level of effort participant rated their agreement with the statements the task was exacting, easy (reverse coded), required a lot of effort (1 = strongly disagree, 7 = strongly agree). Participants were

¹⁷ Note that when designing the experiment, our original prediction was that in the high effort condition, the varying rhythm of turn-taking would disrupt participants' ability to successfully take turns. But when running the experiment, we noticed that participants were able to vary speech rates so fluently that there were very few disruptions: They simply sped up or stopped to allow others to continue with their turn. Interpretations of the effects in this condition were thus post-hoc. We decided to present effects as high effort simply because this is more easily interpretable for readers.

debriefed and given the opportunity to ask question before leaving the laboratory.

Results

Again, two orthogonal Helmert contrasts were specified: ψ_1 differentiated between the synchrony condition and both turn-taking conditions, ψ_2 differentiated between the normal effort and the high effort turn-taking condition. The ICC1's for entitativity (.26), belonging (.14), identification (.20) and sense of personal value to the group (.16), and perceived value of others to the group (.13) indicated that multilevel analysis was required. Therefore, data was screened as in Study 4, which led to the removal of one multilevel outlier (Standardized residual on one of the dependent variables > 3). Means are summarized in Table 5.6.

Manipulation check. First, we tested whether participants in the high effort turn-taking condition would indeed perceive the task to be more effortful than those in the low-effort turn-taking condition. This was indeed the case, $\psi_2: \gamma = .43$ $SE = .21$, $t(52) = 2.02$, $p = .05$. No difference was found in effort between the synchrony and the two turn-taking conditions, $\psi_1: \gamma = -.27$ $SE = .19$, $t(52) = 1.42$, ns .

Solidarity. The regression included both contrasts as group-level predictors for individual-level indicators of solidarity. As expected, we found no differences between the synchrony and the turn-taking conditions in levels of identification, $\psi_1: \gamma = .05$, $t < 1$, ns , perceptions of entitativity, $\psi_1: \gamma = .07$, $t < 1$, ns , or feelings of belonging $\psi_1: \gamma = .13$, $t < 1$, ns . Unlike the alternative explanation would suggest, we did not find a difference between the low effort and high effort turn-taking conditions on either identification, $\psi_2: \gamma = -.13$, $t < 1$, ns , entitativity, $\psi_2: \gamma = .06$, $t < 1$, ns , or belonging $\psi_2: \gamma = -.01$, $t < 1$, ns . Thus, the level of effort that was needed to coordinate behavior did not affect levels of identification, perceptions of entitativity of feelings of belonging.

Value to the group. As predicted, participants who interacted in synchrony reported a lower sense of personal value than participants in both turn-taking conditions, $\psi_1: \gamma = .87$, $SE = .25$, $t(52) = 3.47$, $p = .001$.

In addition, ψ_2 did not significantly affect feelings of personal value, $\gamma = .12$, $t < 1$, *ns*, suggesting that the higher sense of personal value to the group in the turn-taking is not explained by the low levels of effort that the task required.

Similar results were found on the perceived value of the other group members; participants in both turn-taking conditions perceived the others to have higher value to the group than participants in the synchrony condition did, ψ_1 : $\gamma = .81$, $SE = .22$, $t(52) = 3.62$, $p = .001$. No differences were found between the participants in the simple and difficult turn-taking condition, ψ_2 : $\gamma = 0.23$, $t < 1$, *ns*.

Table 5.6 Means (SD's) per condition for the dependent variables in Study 5.

	Synchrony (n = 49)	Turn-taking normal effort (n = 50)	Turn-taking high effort (n = 50)
Personal value	2.99 (1.19)	3.91 (1.41)	3.96 (1.45)
Perceived value of others	3.49 (1.13)	4.27 (1.38)	4.45 (1.26)
Entitativity	3.91 (1.14)	4.15 (.80)	4.12 (.99)
Belonging	4.30 (1.11)	4.61 (.91)	4.51 (.85)
Identification	3.74 (1.04)	3.96 (.73)	3.77 (.81)
Effort	3.61 (.99)	3.13 (.99)	3.55 (1.18)

Mediation. We examined whether there was an indirect effect of turn-taking (vs. synchrony) via sense of personal value to the group on the indicators of solidarity (Preacher et al., 2010). To test the complete model, both contrasts were group level predictors in the analysis, personal value was an individual level mediator and entitativity, identification, and belonging were individual level dependent variables. Results showed the predicted effect of ψ_1 via sense of personal value on identification, $\gamma = .91$, $SE = .35$, $t(55) = 2.61$, $p = .009$, 95% CI [.23; 1.60],

and entitativity, $\gamma = 1.19$, $SE = .48$, $t(55) = 2.50$, $p = .012$, 95% CI [.26; 2.12], but not on belonging, $t < 1$, *ns*.

Importantly, the effects on entitativity and identification were not only mediated by a sense of personal value to the group, but also by the perception that *others* were valued: Indirect effect on identification, $\gamma = 1.24$, $SE = .35$, $t(55) = 3.53$, $p < .001$, 95% CI [.55; 1.94], and entitativity, $\gamma = 1.67$, $SE = .56$, $t(55) = 3.00$, $p = .003$, 95% CI [.58; 2.76]. If anything, the mediation by sense of personal value of others appeared to be slightly stronger. In fact, a sense of personal value was highly positively correlated to the experienced value of others ($r = .75$), suggesting that the perceived importance of self positively relates to the perceived importance of others in the group. Again, no mediation was found for the effects on belonging, $t < 1$, *ns*.

Discussion

The results of Study 5 replicate that an increased sense of personal value in the turn-taking conditions compared to the synchrony condition mediate the effects on feelings of identification and perceptions of group entitativity. Thus, when taking turns, rather than acting in synchrony, a sense of personal value to the group explains the emergence of a sense of solidarity.

Importantly, results show that the extent to which others are valued is just as predictive of the level of solidarity as a sense of own value to the group is. This finding reveals that the forming of solidarity is not primarily self-centered in nature: It is a group process in which contributions of others as well as self play a role.

In the turn-taking high effort condition, although the task was structured in a way that it was difficult to coordinate speech, participants were reluctant to interrupt each other. Instead, they tried to speak faster or stopped their sentence when another participant started speaking. It appeared that the motivation to have a smoothly coordinated conversation was so high that people were able to have conversational flow despite the impediments. We thus conclude that individuals are able to coordinate their actions even if this requires

extra effort (see also Richardson, Marsh, Isenhower, Goodman, & Schmidt, 2007), and that this ability helps them to acquire feelings of solidarity. Thus, the data of Study 5 provided no support for the alternative explanation that alternating speech would elicit solidarity because it requires less effort than speaking in synchrony.

General Discussion

five

The present research shows that during coordinated action, processes of identity formation take place. Findings suggest that solidarity can emerge as a result of different forms of coordinated action: Uniform action, in which similarities between group members are central and individuality is in the background; and more complementary forms of action, in which the individual actions of each group member contributes to the emergence of solidarity. To differentiate these processes of group formation, we identify sense of personal value to the group as a mediator. More specifically, evidence from five studies reveals that compared to people who act in uniform ways (e.g. synchronously), people who act in ways complementary to each other have a higher sense of personal value to the group, which increases their levels of identification and perceptions of group entitativity. These findings contribute to the literature in a number of ways.

First, the results suggest that identity formation can occur as a side effect of co-action. Previous research on social identity formation (Postmes, Haslam et al., 2005; Postmes, Spears et al., 2005) has distinguished between top-down processes of identity formation on the one hand, in which groups form their identity by contrasting their own group with relevant outgroups (e.g. Turner, 1982; 1985) and bottom-up processes on the other hand, in which a group is based on the individual contributions of its members. It has been suggested that the basis on which groups are formed defines the nature of the group: Whereas deductively formed groups allow for little variation between individuals within the group, inductively formed groups can be strengthened by individual differences of their members (Jans et al., 2012).

The present research extends this research. In particular it sheds light on processes of induction, by showing that the way in which individuals coordinate their actions influences the nature of the solidarity. But although the turn-taking results are directly relevant to inductive social identity formation, we point out that the synchrony findings are not directly attributable to deductive social identity formation. The reason is that although synchrony relies on the process of deduction, it may do so in the absence of a shared social identity derived from superordinate commonalities (cf. Postmes, Haslam et al., 2005; Postmes, Spears et al., 2005). Indeed, although in our experiments group actions were coordinated through experimental instructions, none of our studies ensured that a shared social identity was made salient. Although there are situations in which synchrony is predefined by a higher order that could be construed as a shared identity (e.g., in the army, or in a directed orchestra), synchrony is often defined by the entrainment of the behavior between different individuals (e.g. Bernieri & Rosenthal, 1991; Richardson et al., 2007). Thus, the proper conclusion from the present research, we believe, is that synchronous action in groups creates a solidarity in which individuals feel that they add little personal value and are to some extent dispensable to the group. Moreover, synchronous action may create a group structure in which individual distinctiveness is problematic and therefore leaves less room for creativity.

Second, the present research identifies a sense of personal value to the group as a mediator of these effects. More specifically, findings show that when individuals behave in a complementary way, for instance when performing a group task in which they have distinguishable contributions, or when having a conversation in which they take turns, a sense of solidarity is developed on the basis of members' feelings of being an essential component of the group. In contrast, in groups that are structured by similarity, like a choir singing in unison or an army in which soldiers march synchronously, a sense of personal value to the group does not play such a critical role in the process of identification. Our results show that complementary and synchronous co-action are equally likely to increase solidarity within the group, but differ in whether they position the individual in the foreground, or in the background of group formation.

These results provide insight in the role of individuality in groups. Although the need to belong to groups and the need for personal distinctiveness may sometimes be contrasting needs (e.g., Brewer, 1991), the present research illustrates that in certain settings this need not be the case. Our results show that accentuating individual contributions in a group may promote, rather than reduce identification with a group, as this underlines the value of individuals to the group. This finding is in line with research which shows that in inductively formed groups, member heterogeneity may contribute to identification processes (Jans et al., 2011). We extend this finding by showing that in addition to groups that are formed in an inductive way, coordinated action of a complementary nature can similarly underline the essentiality of distinct individual contributions to the group. In addition, the present research identifies the critical role of a sense of personal value to the group in identification processes.

Third, the results of Study 4 suggest that groups that are based on complementary structures may be more successful when generating ideas in subsequent collaboration tasks. More specifically, a trend was found in which complementary action groups generated somewhat more, and somewhat more creative, ideas than groups that had previously acted in synchrony. Although this finding should be interpreted with caution – the results were only marginal and based on a relatively small number of groups – we believe that it provides a potential direction for future research. More specifically, it points to the possibility that compared to groups based on uniformity, complementary groups may be more likely to think divergently; which has been argued to contribute to creativity, problem solving and decision making (Guilford, 1956; Nemeth, 1986). Future research could further examine whether different forms of co-action can improve group performance on for instance creative or decision-making tasks.

Finally, in Study 5 we show that although in complementary groups the focus is more on the individual, this should not be equated with self-centeredness. Instead, Study 5 reveals that perceiving other members as valuable is at least as important in predicting identification and entitativity, as is the sense of personal value to the group. It thus appears that in complementary-based groups, it is not only critical that

one is 'being heard'. Instead, it is the combination of individual inputs from self and others that predicts feelings of solidarity. Indeed, Study 3 shows that singing solo in a choir increases ones sense of *voice* – or the feeling that one is being heard. However, this did not result in increased perceptions of entitativity. In contrast, the subjective feelings of value of self and others *both* relate to perceptions of the group as an entitative whole, suggesting that self and others are treated as similarly important not just in groups founded upon uniformity, but also in groups founded upon complementary actions. This is a conclusion with important implications, for it implies that group systems that are founded upon complementarity need not be intrinsically more competitive or more prone to inequality. But since the conclusion is based on results of a single study, we emphasize that this would be an important issue for future research.

The five studies conducted in this research used different methods to test the proposed model. Findings were replicated in several contexts, making use of naturally occurring groups in an online study (Study 1), and manipulated groups in controlled lab environments (Studies 2 & 5) and field studies (Studies 3 & 4) with different samples from the general population, undergraduate students, singers, and actors respectively. The coordination activities that were examined included activities performed in naturally occurring groups, such as sports, talking, making assignments, organizing events etc. (Study 1), the act of singing together (Study 3), reciting stories via headsets (Study 2) or reciting poems in either a free rhythm (Study 4) or a directed rhythm (Study 5). By exploring different methods we may have sacrificed some experimental control, which could have affected the tightness of our results. However, we believe that testing our model in different contexts increased the ecological validity of our findings.

Limitations and Directions for Future Research

One important caveat is that (in the nature of experimental research) we attempted to differentiate idealized states in which groups are either based on uniformity vs. complementarity. Of course, this notion of two

types of processes is likely to present an overly simplistic view on reality. We believe that most groups rely on both complementary and uniform inputs from its members, and therefore both processes described here should be evident, to a greater or lesser extent, in all groups in society. Nevertheless, the results of Study 1 do suggest that it may be fruitful to make this distinction even in real-life groups.

One more minor issue concerns some slight variations in findings across studies. First it is important to point out where there was no variability: We found relatively similar results across all indicators of solidarity, with coordinated action increasing feelings of belonging, levels of identification, and perceptions of entitativity. Although we had no a priori expectations for differences between these three constructs, the literature does suggest that they are distinct indicators that capture different aspects of solidarity. Whereas entitativity is defined as the overarching sense of unity that group members experience, identification is concerned with the relation of the individual with the group. These constructs are closely related (e.g., Castano, Yzerbyt, & Bourguignon, 2003; Jans et al., 2011). In our studies, we confirmed that the effects on perceived entitativity and identification were both mediated by a sense of personal value to the group.

But with respect to this mediation, effects on belongingness were slightly more elusive: In Study 4 and 5, no mediation was found. Although it is difficult to interpret null effects, we may speculate that part of the reason for this lies with the measure used: The Need Threat Scale (Van Beest & Williams, 1996). In this scale, items of belonging are mixed with items of rejection, such as the reversed item “I felt accepted by the others group members”. We successfully used this as a measure of solidarity in a previous line of research, in which belonging was threatened by a disruption of conversational coordination (Koudenburg et al., 2011a; 2013a; 2013c, *Chapter 3, 4, 7*). However, in the current studies no such threat is present: Participants can coordinate successfully in both the synchrony and the turn-taking condition—they just use different ways of coordination. Perhaps this absence of any threat may explain why this scale proved to be less sensitive in the present studies.

Conclusions

In the present research we show that a sense of 'us' can emerge in the background of specific actions that individuals perform together, but that the nature of these actions (complementary or uniform) shapes the groups via different pathways. This sense of 'us' consists not just of perceptions of group entitativity but also a sense of individual identification to the group. This confirms that dynamic processes in small groups can take on a more categorical and more interactive shape, both of which produce a sense of solidarity. The crucial difference between these two processes is not the level of solidarity they produce, but its quality: Categorical processes relegate individual group members to the background of group formation. In interactive processes, by contrast, individuals are at the forefront of what it means to be "us".

Chapter six

Resounding Silences:

Subtle Norm Regulation in Everyday Interactions

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Abstract

In this article we suggest a mechanism for norm regulation that does not rely on explicit information exchange or costly reinforcement, but rather on the sensitivity of group members to social cues in their environment. We examine whether brief conversational silences can (a) signal a threat to one's inclusionary status in the group and (b) motivate people to shift their attitudes to be in line with group norms. In two experiments—using videotaped and actual conversations, respectively—we manipulated the presence of a brief silence after group members expressed a certain attitude. As predicted, attitudes changed relative to the norm after such a brief silence. Those highly motivated to belong changed their attitude to become more normative, whereas those less motivated to belong shifted away from the group norm. The results suggest that social regulation may occur through very subtle means.

*Resounding Silences:
Subtle Norm Regulation in Everyday Interactions*

Social and behavioral research on norms often focuses on explicit norms that are regulated by social control mechanisms that are also explicit, and often costly (e.g., Axelrod, 1986; Fehr and Gächter, 2000; Festinger, 1950; Horne, 2001a; Moscovici, 1991). In the present article, we suggest that norms can also be more implicitly inferred from the behaviors or expressions of others (e.g., Bandura, 1977; Cialdini, 2001). We focus on the possibility that conformity to such group norms can be reinforced by subtle mechanisms, such as a mechanism of silence, which need not be costly.

We define social norms as generally accepted prescriptions for beliefs and behaviors within a certain group (cf. Morris, 1956). Social norms are generally shared among group members and guide expectations about how members should think or behave. Although social norms can be explicit (e.g., because people are explicitly informed of rules and expectations), group members are also able to induce tacit group norms from the interaction, even in the absence of explicit cues to behavior (Festinger & Thibaut, 1951; Postmes et al., 2005; Postmes, Spears, & Lea, 1998). In fact, the spontaneous inference of social norms from the observation of others' behavior appears to be a generic social learning mechanism (e.g., Bandura, 1977; Cialdini, 2001). Thus, the acquisition of group norms appears to be, at least in part, a process occurring in the background of regular social interactions during which group members implicitly gain knowledge about social standards.

Although norms often appear to emerge more tacitly, this does not mean that they would be less influential. Group members are often inclined to follow tacit group norms, if only because deviation from them (whether they be prescriptive or descriptive, explicit or tacit) exposes one to risks of derogation or ingroup rejection (Marques & Paez, 1994).

Focusing on the question of how norms, once established, are maintained, one can again observe an important distinction between more explicit or more tacit processes. On the explicit side, social norms may to some extent be maintained through regulation and the exertion of social control (e.g., Festinger, 1950; Homans, 1961; Horne, 2001a, 2001b; Moscovici, 1991). In conversations for instance, members may discuss values and norms that are important to their group (Festinger & Thibaut, 1951; Smith & Postmes, 2011) or make correcting remarks when opinions are expressed that deviate from them (Feldman, 1984).

However, research suggests that in many group settings, explicit regulation is quite rare. Even when prescriptive norms are blatantly violated (and when an explicit corrective response would appear to be called for), signals of group disapproval tend to be rare and subtle. Classic studies of people's responses to violations of norms in queues showed that most often, people do nothing when someone cuts in line or jumps the queue (Mann, 1969; Milgram et al., 1986). Similarly, recent research observed reactions of members of the public to confederates drawing graffiti in an elevator or littering in the park (Chekroun & Brauer, 2002). Again, in almost half of the cases there were no visible responses to the norm-deviant behaviors. And if responses did occur, the most frequent signs of disapproval were quite subtle (e.g., sighs or angry looks). Only in 18 percent of the cases was an explicit response made. Taken together, the literature suggests that social control is only rarely exerted through explicit behavioral corrections.

Theoretical Argument

The absence of an explicit response to a norm violation is often easily interpreted as a defect in norm regulation (e.g., Chekroun & Brauer, 2002). But despite this apparent absence of overt regulation, people do tend to adhere to social norms when expressing their opinions (Kitts, 2003; Turner, 1991). So how to explain the apparent absence of corrective behavior in many public settings? One explanation may be that norm regulation takes place at a much more subtle level. In this article we suggest a possible mechanism for norm regulation within

groups that does not rely on explicit social sanctioning, but rather on the sensitivity of group members to social cues in their environment.

In conversations for instance, a person may become aware of being a deviant not just because one is criticized for expressing certain opinions, but also (and perhaps more often) because of subtle cues that alert a person to possible social exclusion. A provocative statement often merely disrupts the continuity and flow of a conversation, for example because the audience remains silent for a brief period while searching for an appropriate response.

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Although such brief interruption of a fluent conversation by an unexpected silence can be seen as a lack of action, it may also be interpreted as “off-record” behavior. Off-record communication cannot be unambiguously attributed to one clear communicative intention (Brown & Levinson, 1978) and thus offers the “actor” the ability to deny any intent to harm or threaten the recipient with social exclusion (e.g., one would rarely be challenged for not speaking, and in the unlikely event this would happen one could always claim being momentarily distracted or pondering what to say). Thus, for the actor the brief silence has few potential costs and decreases the risk of retaliation by the recipient. But for the recipient, the actor’s brief inaction may send a powerful signal; silence can be deafening.

The Meaning of Silence

A silence can have many meanings, ranging from acceptance to rejection and from doubtfulness to a simple reflection of a person’s normal rate of thinking (Johannesen, 1974; Tannen, 1993). Because silences can be ambiguous, the context in which a silence occurs often determines which meaning should be attached (Hasegawa & Gudykunst, 1998; Jaworski, 1993).

In social conversations, people often seek to validate their opinions with those of others (Festinger, 1954; Goethals, 1987). Our prior research suggests that a smoothly flowing conversation implies that there is agreement on an issue— people feel that they are on the same

wavelength and their opinions are shared among group members (Koudenburg, Postmes, & Gordijn, 2013a, *Chapter 4*). On the other hand, the occurrence of a brief silence after an actor has stated his or her opinion tends to be experienced negatively and raises questions about the consensus between actor and ingroup (Koudenburg et al., 2011a, *Chapter 3*; Pomerantz, 1984). When others remain silent, the actor infers that something he or she said was problematic and is left guessing as to what the issue may be. In some sense, a silence may be an extremely persuasive signal: One cannot argue or reason with a warning that remains tacit. Moreover, in group settings an explicit sanction tends to be imposed by one individual, but a silence by definition can only occur when all members of the group remain silent. Thus, a silence may be experienced as a collective disapproval.

But silences appear to do more than just signal potential disagreement. The feelings of distress and unease that often co-occur may also be explained by the implicit threat that a silence poses to one's inclusion within the group (Koudenburg et al., 2011a, *Chapter 3*). Research suggests that humans possess a highly sensitive monitoring system for detecting threats of social exclusion (Kerr & Levine, 2008; Leary & Baumeister, 2000; Leary, Tambor, Terdal, & Downs, 1995; Pickett, Gardner, & Knowles, 2004; Wesselmann, Nairne, & Williams, 2012). Similarly, an unexpected silence raises questions about the relation of the speaker to their audience: It signals to group members that certain conventions or norms may have been violated and thus that there is a latent threat of expulsion from the group.

In sum, previous research has shown that subtle silences in group conversations may (a) threaten feelings of belonging and (b) raise concerns over a lack of consensus (Koudenburg et al., 2011a, *Chapter 3*). The current article focuses on the consequences of such brief silences for normative alignment within groups. We expect that in order to cope with the threats to inclusion, group members should be more likely to adjust their views to the implicit group norm. Of course this presumes that people are motivated to belong to the group in the first place. This motive may not be equally strong for all individuals in all situations.

The Motive to Belong

In general, humans are highly motivated to form and maintain strong interpersonal bonds and to belong to groups (Baumeister & Leary, 1995). Being excluded from valued groups (Jetten, Branscombe, Spears, & McKimmie, 2003) and even total strangers is often highly aversive (Williams, 2001). In psychological research, having close social ties correlates with subjective well-being and self-esteem (Baumeister, 1991; Howell et al., 2014; Leary et al., 1995), as well as health (Jetten, Haslam, & Haslam, 2011; Stansfeld, Bosma, Hemingway, & Marmot, 1998).

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When belongingness is being threatened, group members often engage in behavior aimed at reestablishing their inclusionary status (Williams, 2009). One way to improve one's chances for (re)affiliation is to attune to social information (Gardner, Pickett, & Brewer, 2000). Indeed, a high (or threatened) motive to belong has been shown to increase one's ability to accurately identify nonverbal signals of affiliation (Bernstein, Young, Brown, Sacco, & Claypool, 2008) and to monitor and remember social information (Gardner et al., 2000; Pickett et al., 2004), and has been associated with greater behavioral mimicry (Lakin, Chartrand, & Arkin, 2008). This increased sensitivity to social cues has been argued to help people navigate the social environment more successfully (Pickett et al., 2004).

We propose that such increased social sensitivity—resulting from the motive to belong to a group—can also serve norm regulation. Research shows that people often rely on norms to accurately understand and effectively respond to social situations. In order to increase their inclusionary status, group members may assimilate their behavior and attitudes to these norms (Cialdini & Goldstein, 2004; Eagly & Chaiken, 1993; Moreland & Levine, 1989; Turner, 1991). We therefore suggest that group members' social sensitivity may enable norm regulation without the need for explicit social sanctioning.

But although conformity would be high among group members who want to belong, not everyone may be keen as to conform. In fact, seeking distinctiveness can also be very desirable and have positive consequen-

ces for the self-concept (Blanton & Christie, 2003; Brewer, 1991; Hornsey & Jetten, 2004; Turner, 1991). Indeed, the classic conformity studies of Asch (1956) were designed to examine the phenomenon of nonconformity, and this was actually the dominant response. In particular, we do not expect people who have a low motivation to belong to respond to a brief silence by assimilating to the group norm.

Two Experimental Studies

The studies presented in this article examine whether brief conversational silences can (a) signal a threat to one's inclusionary status in the group and (b) motivate people to shift to group norms. We suggest that by implicitly raising the prospect that normative boundaries may have been violated, brief silences can serve as a mechanism for norm regulation. Moreover, we hypothesize that if we would indeed find that respondents align their attitudes with implicit group norms for reasons to do with inclusionary status, the predicted effects should be especially observable in group members who are highly motivated to belong. People who are less motivated to belong to the group will be less likely to make adjustments toward the group norm. If anything, the rejection that is implied by the silence may reinforce their feeling of being distinct from the group and therefore motivate them to remain distinctive from group norms.

Study 1 was designed to examine these hypotheses in a controlled experimental setting, where people watch a videotaped conversation while imagining that they are one of the communicators. Both threat and attitudes were measured after watching the video. Study 2 examined the same phenomenon in actual conversations to test whether people feel threatened and change their preexisting attitudes as a result of a brief silence. In both studies we expected no attitude shifts in the conversational no-silence condition: As there was no threat of disagreement or exclusion, participants had no reason to change their attitudes. When there was a brief silence, however, we expected motivation to belong to the group to predict the degree to which participants adjusted their attitudes to the group norm.

Study 1

Methods

Participants. In Study 1, 134 Dutch students in the social sciences (M age = 19.70, SD = 2.54, 107 female) participated for partial course credit.¹⁸ They were randomly assigned to the conditions of a study in which silence (no-silence vs. silence) was manipulated. Motive to belong was measured and used as a continuous predictor.

Procedure and independent variables. We tested our hypotheses with a video paradigm (see also Koudenburg et al., 2011a, *Chapter 3*). Participants were seated behind personal computers in individual cubicles. They were instructed to watch a six-minute video of three female students—who knew each other superficially—having a conversation about relationships. Before watching the video, participants were presented with a photograph of the three students and instructed to imagine being one of the conversation partners (named Linda). Participants were presented with the following information: “People often have certain motives in conversations. It is possible that Linda has certain motives in the conversation with her peer students. We would like you to imagine being Linda. To what extent do you think that you, if you were in Linda’s situation, would have the following motivation?” Then, participants indicated their agreement with the statement “I would be motivated to belong” on a 7-point Likert scale (1 = completely disagree, 7 = completely agree).

After four minutes of ongoing conversation Linda said: “Recently, I heard about a teacher having sex with students. I think that this should not be allowed, such a teacher should be fired immediately.” In the no-silence condition the other group members smoothly continued the

¹⁸ The data of 41 participants has been previously analyzed in Koudenburg et al., (2011a, Study 2) to show that a brief silence can decrease feelings of belonging and social validation. In the present study, we increased the sample size ($n = 134$) to enhance the statistical power to test for the interaction of silence and motive to belong on attitudes. As with the first 41 participants, belongingness and validation measures were included in the questionnaire before assessing attitude change. However, we decided not to report these measures (that replicate the previous findings) here, as the focus of this article is on conformity effects rather than on feelings of belonging and social validation.

conversation on a topic indirectly related to Linda's statement but without responding explicitly to her statement. Their agreement was thus left ambiguous. The conversation continued approximately two more minutes with no further reference to Linda's statement. In the silence condition, the statement was followed by four seconds of silence, after which the conversation continued. Editing of the duration of this single silence ensured that no discontinuities were discernible. Except for the duration of the silence, the two videos were identical.

Dependent variables. After watching the video, participants filled out an online questionnaire. Threat was measured with a single-item, "I feel anxious," which was embedded in a questionnaire about emotions (e.g., angry, happy). To measure post-conversation attitudes regarding teacher-student relationships we constructed a four-item scale (1 = completely disagree, 7 = completely agree) with items: "A teacher who engages in a romantic relationship with a student should be fired immediately" (reverse coded); "Whether teachers have an intimate relationship with a student in their spare time is their business, as long as the relationships at work are strictly professional"; "Sexual relationships between teachers and students are acceptable"; "An intimate relationship between teachers and students is never acceptable" (reverse-coded, scale alpha = .83).

During the video conversation, Linda expressed her disapproval of teacher-student relationships. A silence after this statement may be perceived as a disagreement by the other group members, implying that the group norm is tolerance regarding teacher-student relationships (see also Koudenburg et al., 2011a, *Chapter 3*). More tolerant post-conversation attitudes would thus reflect adjustment to the implicit group norm.

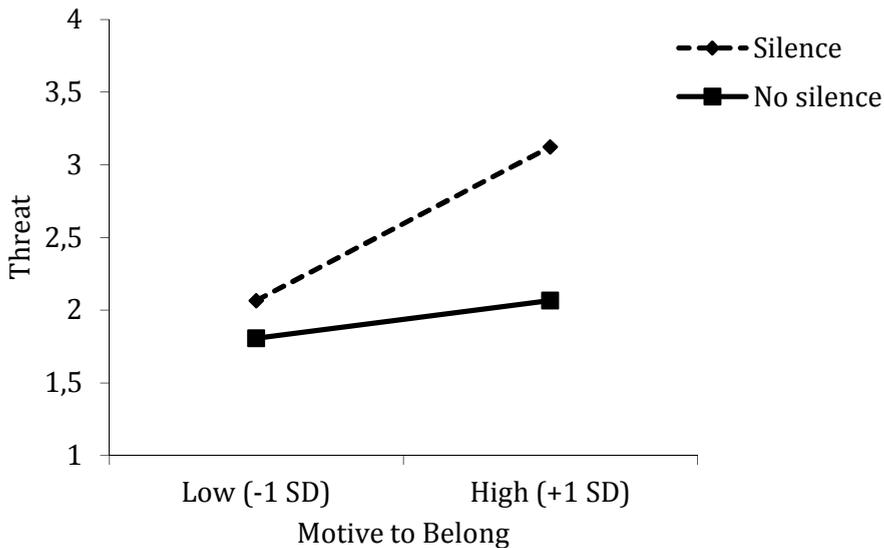
Results and discussion

Threat. Scores on motive to belong ($M = 4.96$, $SD = 1.43$) were standardized prior to analyses. Threat was regressed onto motive to belong, silence (0 = no-silence, 1 = silence), and the motive to belong by silence interaction. No main effect for motive to belong was found ($t < 1$). Silence had a significant effect on threat, $B = .27$, $t(133) = 3.38$, $p =$

.001, such that participants experienced more threat when there was a silence in the conversation, rather than when there was no silence. Importantly, we also found the predicted interaction, $B = .23$, $t(133) = 2.03$, $p = .04$, see Figure 6.1.

Simple slope analysis revealed that for participants who were highly motivated to belong (+1 *SD*), a silence led to more threat than no silence, $B = .43$, $t(133) = 3.82$, $p < .001$, whereas participants who had a low motivation to belong (-1 *SD*) experienced no more threat in the silence than in the no-silence condition ($t < 1$). Moreover, in the no-silence condition, motivation to belong did not predict threat ($t < 1$), but in the silence condition higher motivation to belong was associated with higher feelings of threat, $B = .43$, $t(133) = 3.86$, $p < .001$.

Figure 6.1 Feelings of threat predicted by motive to belong for the different conditions of silence (Study 1).



Conformity. Attitude scores were regressed onto motive to belong, silence, and the motive to belong by silence interaction. As predicted, regression analysis showed no main effect of silence or motive to belong on attitudes ($ts < 1.34$). However, the predicted interaction of motive to

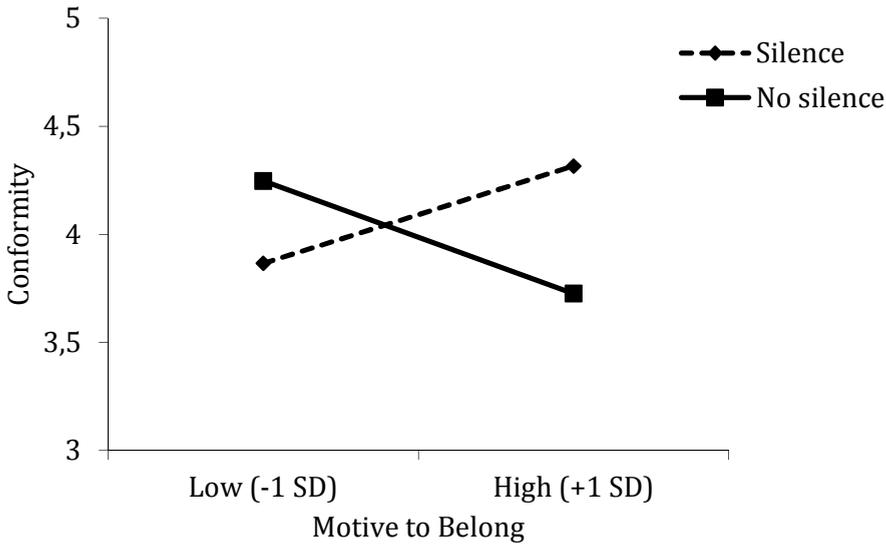
belong and silence was found, $B = .24$, $t(133) = 1.98$, $p = .05$. Figure 6.2 shows that the pattern of means was as predicted, although none of the simple slopes themselves were significant at $p < .05$. That is, when conversation is disrupted by a brief and uncomfortable silence, the pattern suggests that motivation to belong to the group positively predicts the alignment of attitudes with the group norm—which is implied to be opposed to the expressed statement, $B = .16$, $t(133) = 1.34$, $p = .18$.

The opposite trend was found when there was no silence in the conversation, $B = 2.18$, $t(133) = 21.47$, $p = .15$. In this condition, the flow of the conversation indicated that there was consensus on the expressed statement (Koudenburg et al., 2011a, *Chapter 3*). Therefore, assimilation to the group norm was reflected by less tolerant attitudes regarding student-teacher relations. The pattern thus suggests that in the no-silence condition attitudes also became more in line with the group when motivation to belong increased.

Furthermore, a marginally significant simple main effect suggests that the silence instigated an attitude shift in the direction of the group norm for participants with a high motive to belong (+1 *SD*), $B = .21$, $t(133) = 1.71$, $p = .09$, compared with a slight counter-normative shift in attitudes for participants with a low motivation to belong (−1 *SD*), $B = 2.14$, $t(133) = 21.107$, $p = .27$.

Although the interaction on attitudes was significant, the simple main effects were not. This could be due to the fact that participants were not actually participating in the conversation and therefore did not express their own attitudes—some participants might have found it difficult to empathize with Linda and distanced themselves from Linda's expressions. Although the interaction effects of silence with the motivation to belong suggest that participants were able to imagine this situation, it is theoretically possible that people would respond differently when imagining being in this situation, rather than being in the situation themselves. Second, attitudes were not premeasured, thus we could not correct for pre-discussion attitudes in order to assess actual attitude change.

Figure 6.2 Attitude conformity towards implicit group norm (tolerance regarding student-teacher relationships) predicted by motivation to belong for the different conditions of silence (Study 1).



Study 2

A second study was conducted to examine the hypotheses in a higher impact and more realistic setting, namely, in an actual conversation. This enabled us to test whether the effects on opinion change would be stronger when participants expressed their own opinion in a group.

Methods

Participants. In Study 2, 69 Dutch students participated in a confederate study in the laboratory for partial course credit or a reward of five euros. Participants (M age = 20.90, SD = 4.11, 52 female) were randomly assigned to the conditions of a study in which the presence of silence (no silence vs. silence) was manipulated. Motive to belong was measured and used as a continuous predictor, and threat was measured right after the conversation. Attitudes were measured both before and after the conversation.

Materials and procedure. Premeasure. Upon arrival at the laboratory, participants and confederates were instructed about the procedure of the study. In groups of three (one participant, two confederates) they were informed that they would have a conversation in which they would discuss several issues. Then, before starting the conversation, participants individually completed a premeasure assessment of their attitudes on a list of topics, in which a single item was embedded to measure the target attitude “heavy smokers should be placed at the bottom of the waiting list for organ donation” (1 = completely disagree, 7 = completely agree). In addition, we asked participants about their motivations for the conversation with their peer students. Participants read: “Indicate for each motive to what extent you have this motive in the conversation with your peer students: Are you motivated to belong?” on a 7-point Likert-scale (1 = not motivated at all, 7 = very motivated). To avoid making this specific motive too salient, it was measured with a single item embedded in a larger questionnaire about different motives.

Conversation. Participants and two confederates were then asked to sit down in three chairs. These chairs were placed in a way that minimized nonverbal interaction: Partners faced away from each other. Participants had a four-minute conversation with the two confederates in which silence (no silence vs. silence) was manipulated. Each conversant was assigned a topic for discussion: The confederates were assigned the topics “People who are mentally challenged should not have children” and “People should be able to get a driver’s license at the age of 16” (in the Netherlands, the legal age to drive a car is 18). The participant was assigned the topic “Heavy smokers should be placed at the bottom of the waiting list for organ donation.” All conversants were asked to describe their opinion on their topic in one sentence, after which the group members discussed this topic together. Confederates were instructed and trained to avoid interruptions in turn-taking and to avoid silences. First, the topics of both confederates were discussed. Then, the participants gave their opinion on their topic, after which in the no-silence condition, the confederates smoothly continued the conversation by discussing whether or not such a policy was already in use in the Netherlands and how the donor system was arranged in other countries. In the silence condition however, confederates remained

silent for four seconds after which they continued the conversation in a way similar to the no-silence condition. Importantly, they did not reveal their own opinion on the topic.

Dependent variables. After the conversation, the participant filled out a computerized questionnaire in a cubicle, which the confederates ostensibly filled out in different cubicles. Threat was measured as in Study 1. Afterwards, participants' attitudes regarding discriminatory policies against smokers in organ donation were again assessed on a 7-point scale ranging from 1 = completely disagree, 7 = completely agree. This time with a three-item measure: "Heavy smokers should be placed at the bottom of the waiting list for organ donation," "Heavy smokers should have the same rights concerning donor organs as other people" (reverse coded), and "Nonsmokers should be given priority concerning donor organs" ($\alpha = .83$). The premeasure was shorter because we did not want to make the attitude topic highly salient at first and we wanted to avoid the possibility of participants strongly committing themselves to a prior attitude.

Because we could not a priori control what attitude participants would express, we searched for a topic on which a clear a priori norm existed. A pilot test using the same three-item 7-point scale among 53 psychology students confirmed that participants perceived a group norm in favor of discriminating policies against smokers in organ donation ($M = 4.50$, $SD = 1.19$, which differed significantly from the midpoint of the scale, $t(52) = 3.07$, $p < .005$). Importantly, to assess the perceived norm, participants in the pilot were asked to what extent they perceived others to be in favor of these policies, rather than answering this question for themselves.

Attitude conformity. As this study aimed to assess the subtlety of norm regulation, the norm was not explicitly stated in the conversation. In order to conform, participants would have to search for cues to locate the group norm. One source of information would be a priori expectations about the group norm. These were in favor of discriminating smokers on the waiting list for organ donation. Another source would be to find out whether discussing such discriminatory policies would be a taboo. Because group members started discussing how the issue is handled in different countries, there seemed to be no

taboo on the subject. Group members were allowed to express their preference for such policies. Shifting attitudes toward the group norm would thus be reflected by a shift in favor of discriminatory policies against smokers.

As the perceived norm was in favor of discriminatory policies, we would expect this effect to be largest for participants who initially disagreed with such policies. For these participants ($n = 29$), a silence would confirm that their expressed opinion was anti-normative, and it would be likely that they would align their attitudes with the group norm depending on whether they were motivated to belong. On the other hand, for participants who expressed an attitude in line with the norm (i.e., in favor of discriminatory policies against smokers, $n = 30$), a silence was difficult to interpret. After all, their expressed attitude did not deviate from the perceived group norm. We therefore also analyzed the data separately for different attitude groups.

Manipulation check. Conversations were videotaped. To check whether silences occurred in the appropriate conditions, videos were coded for silence versus no silence by a trained coder who was blind to the conditions of the study. In addition, participants were asked to estimate the time between their expressed opinion and the moment the others responded. After filling out the questionnaire, participants were fully debriefed.

Results

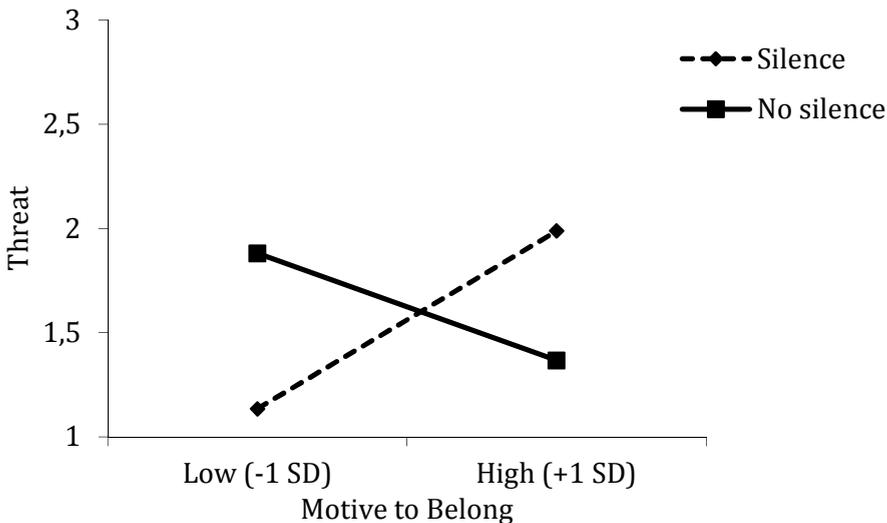
Manipulation check. Video codings showed that silences occurred only in the intended condition. Moreover, participants' estimates of the duration between the expressed opinion and the response of the others were log-transformed to attain a normal distribution. Participants in the silence condition perceived the time before others responded to be longer ($\text{Duration}/g = 1.59$) than participants in the no-silence condition ($\text{Duration}/g = 1.21$), $F(1, 67) = 4.80$, $p = .03$.

Threat. Scores on motive to belong ($M = 4.42$, $SD = 1.36$) were standardized prior to analyses. Threat was regressed onto motive to belong, silence (0 = no silence, 1 = silence), and the motive to belong by

silence interaction. There were no significant main effects for motive to belong ($B = .26$, $t(64) = 1.66$, ns) or silence ($t < 1$). However, as predicted, the silence by motive to belong interaction was significant, $B = .45$, $t(64) = 2.88$, $p = .005$, see Figure 6.3.

Simple slope analyses revealed a marginal effect showing that for participants who were highly motivated to belong (+1 SD), a silence increased feelings of threat compared to no silence ($B = .31$, $t(64) = 1.88$, $p = .06$). Unexpectedly, participants with a low motivation to belong (-1 SD) experienced less threat in the silence than in the no-silence condition ($B = -.38$, $t(64) = 22.23$, $p = .03$). Furthermore, as expected, motive to belong did not predict threat in the no-silence condition ($B = .226$, $t(64) = 21.66$, ns), but in the silence condition, threat was predicted by motivation to belong ($B = .43$, $t(64) = 2.37$, $p = .02$).

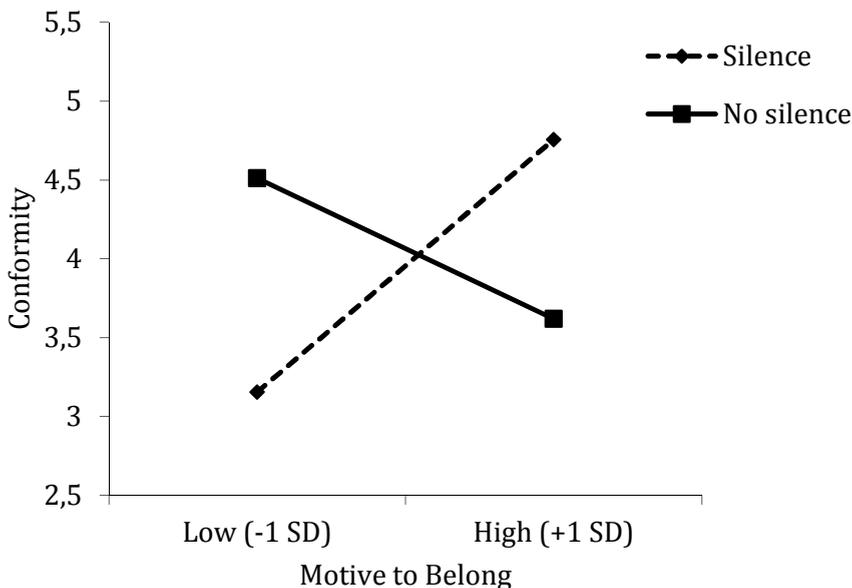
Figure 6.3 Feelings of threat predicted by motivation to belong for the different conditions of silence (Study 2).



Attitude conformity. Post-conversation attitudes were regressed onto silence (0 = no silence, 1 = silence), motive to belong, and the silence by motive to belong interaction. Premeasured attitudes ($M = 4.17$, $SD = 1.66$) were included as a covariate. No main effects for silence

or motive to belong were found ($ts < 1$). However, the predicted silence by motive to belong interaction was found, $B = .29$, $t(64) = 2.89$, $p = .005$.¹⁹ Simple slopes analysis revealed that in the no-silence condition, motivation to belong did not predict attitude change ($t < 1$). In the silence condition however, motivation to belong positively predicted whether people shifted their attitudes toward the group norm, $B = .61$, $t(64) = 3.40$, $p = .001$. Further analysis of the simple slopes showed that as a result of the silence, participants with a high motive to belong (+1 *SD*) shifted their attitudes in a normative direction, $B = .36$, $t(64) = 2.24$, $p = .03$, whereas participants with a low motivation to belong (-1 *SD*) shifted their attitudes away from the group norm, $B = .44$, $t(64) = 22.65$, $p = .01$ (see Figure 6.4).

Figure 6.4 Attitude conformity towards group norm (discriminating policies against smokers in organ donation) predicted by motivation to belong for the different conditions of silence (Study 2).



¹⁹ When pre-measured attitudes were not included as a covariate, a similar significant interaction effect appeared, $B = .52$, $t(65) = 3.43$, $p = .001$, while main effects were non-significant ($ts < 1.89$).

The separate regression analyses for the different attitude groups were consistent with the hypotheses. Indeed, for participants who expressed a normative attitude (in favor of discriminating policies), the motive to belong by silence interaction did not predict conformity, $t(28) < .1$. However, for participants who expressed a deviant attitude (against discriminating policies), motive to belong predicted conformity after a silence, $B = .60$, $t(27) = 2.62$, $p = .015$.

Discussion

Replicating the findings of Study 1, Study 2 shows that subtle conversational silences can regulate normative behavior in groups. By examining students' own attitudes in an actual discussion setting, this study reveals that students whose expressed opinion is met with a brief four-second silence shift their attitudes according to the group norm when they are highly motivated to belong but distance their attitudes away from the group norm if their motivation to belong to the group is low.²⁰

General Discussion

The present research examined whether norms in group interaction can be regulated by subtle conversational characteristics other than the content of communication. Two studies showed that brief conversational silences elicit normative attitude change to the extent that a member is motivated to belong to a certain group. More specifically, when the expression of an opinion results in a

²⁰ Alternatively, one could explain the attitude shift of group members with a low motivation to belong as an attempt to gain a sense of control or meaningful existence. This suggests a negative correlation between these motives and the motive to belong. In Study 2 the motive to "control the course of the conversation," "influence the direction of the conversation," (both relating to the need for control) and "think positively about oneself" (somewhat related to the need for meaningful existence) were included in the premeasured motives. However, no support for the alternative explanation was found, as the motive to belong and the motive to control did not correlate: $r = .03$, *ns*, and the relation between the motive to belong and the motive to think positively about oneself was positive: $r = .25$, $p = .04$. In addition, neither the control motive nor the meaningful existence motive nor their interactions with silence predicted conformity (all t s < 1 , *ns*).

conversational silence, this raises questions about the consensus in the group and the acceptability of what was said (Koudenburg et al., 2011a, *Chapter 3*). The present research shows that if such a silence occurs in a conversation, the level of threat experienced by the speaker depends on his or her motivation to belong to the group. Moreover, a person's motivation to belong positively predicts the extent to which group members assimilate their attitudes to the group norm after the occurrence of a silence.

Importantly, in neither of the studies did participants reveal their attitudes on the posttest publicly to the other group members. This suggests that silences affect attitudes held privately, rather than merely inducing group members to publicly assimilate to group-normative attitudes.

The results extend previous research on the development of norms through group conversation (Festinger & Thibaut, 1951; Postmes et al., 2005; Smith & Postmes, 2011). We show that beyond the explicit discussion of group norms, and the inference of group norms from observed behavior, there are also very subtle conversational characteristics that can effectively regulate or influence attitudes within the group. The current pattern of the findings suggests that people who are highly motivated to belong respond to a brief conversational silence with a subtle change of attitudes: The silence prompts them to attend to, and infer, group norms. Thus, when a person is highly motivated to belong to a group, norms are regulated not just because of any overt actions of the group toward the individual, but also because the individual is eager to discover what is normative in situations that are unexpected.

Interestingly, those who are less motivated to belong respond to a silence by contrasting their attitudes from the inferred group norm. This finding needs to be interpreted with some caution. In both studies, we used a unidirectional measure of belonging that asked participants to indicate their agreement with the statement "I am motivated to belong" during the conversation with (my) peer students. Although high scores on this measure can be interpreted without much ambiguity, it is not entirely clear how we should interpret low scores on this measure. Disagreement with the statement can either mean that one is indifferent

toward group membership or that one has a negative attitude toward the group. If we measure indifference, it would be unlikely that this influences one's behavior. However, we actually find evidence for distancing from the group norm among participants who score low on motive to belong. This could be explained by a priori negative attitudes toward the group, which have not been appropriately captured by the scale. It is also possible that when participants signal that others hold different opinions than themselves, they are inclined to devalue these others (Festinger, 1954), which in turn may lead to group dynamics that foster polarization between members (Macy, Kitts, Flache, & Benard, 2003). In a sense, for those who are less motivated to belong, a silence would serve as a subtle cue for what is normative in the group, but they may use this not to assimilate but rather to signal their distinctiveness from the group (e.g., Postmes et al., 2001). Future research is needed to examine the group dynamics that come into play when members have a low or even negative motivation to belong.

We note that because we measured attitudes shortly after the conversation, no conclusions can be drawn about whether attitudinal shifts induced by the silence remain stable over time. However, the moderation by the motive to belong suggests that the findings can be interpreted as at least short-term attempts to reaffiliate with the group.

Implications for Theory

The present studies develop a complementary perspective on norm regulation. In previous research, norm regulation has often been seen as a process that necessarily involves sanctioning of deviant behaviors (e.g., Axelrod, 1986; Horne, 2001a, 2001b). However, such sanctioning can be costly in terms of resources and risks involved, and perhaps this is why many group members refrain from punishing others (Chekroun & Brauer 2002; Coleman, 1990; Flache & Macy, 1996).²¹ On the basis of

²¹ To overcome the situation in which no one sanctions, new norms can arise where group members are encouraged to sanction deviant behavior (so-called metanorms; Axelrod, 1986; Horne, 2001a, 2001b).

the research findings, we suggest that there are more subtle forms of norm regulation that may, in everyday social settings, play a very important role in regulating social interactions. We propose that people (especially those who have a strong desire to belong) are very sensitive to cues that signal potential social exclusion (see also Leary et al., 1995; Pickett et al., 2004). Brief conversational silences may pose subtle threats to belonging, thereby encouraging conformity. We focus here on conformity to opinion norms that are implicit within the interaction. Although future research should examine whether similar processes can explain conformity to standards that are more explicit, we see no reason for the processes to be any different for tacit or explicit norms.

There is some research suggesting that implicit cues may even be more efficient at regulating norms than are explicit cues. Recent studies revealed that whereas explicit social rejection leads to withdrawal from social contact, implicit social exclusion (i.e., being ignored) is more likely to promote reengagement in social contact (Molden et al., 2009). In a sense, our research merely confirms that subtle threats to exclusion promote conformity among those with a stronger need to belong. Important to take into account here is that in natural interactions such brief hiccups and interruptions may be quite commonplace, whereas we know that the costly reinforcements that have hitherto received more research attention (e.g., Axelrod, 1986; Horne, 2001a, 2001b) are not as common. Thus, there is a real potential for subtle signals to have the stronger social effects overall.

Identifying a subtle mechanism for norm regulation may provide insight in the relationship between group cohesion and norm regulation. Although a general consensus has been reached that norms are more effective in tightknit communities (e.g., Hechter, 1987; Hechter & Kanazawa, 1993), the role of sanctioning in explaining this relation has been equivocal. Some scholars have proposed that sanctioning is more frequent in cohesive groups (Horne, 2001a). Others have suggested the opposite because sanctioning within cohesive groups would create the risk of losing important relationships (Macy, Kitts, & Flache, 1997). A third explanation concerns the effectiveness of sanctioning in cohesive groups: Sanctioning may have a greater impact to the extent that deviants are more dependent on the group (Homans, 1961). The

ambiguity of these findings may point to the importance of alternative mechanisms of norm regulation as explored in the present article. The subtle cues for norm transgression identified in the present studies could explain formation and maintenance of norms even in contexts in which explicit sanctioning appears to be, at first blush, completely absent. Importantly, the only requirement for such regulation to be effective is for group members to have a high motivation to belong (as one would expect in cohesive groups). Future research on norm regulation should therefore consider looking beyond explicit forms of sanctioning.

Besides focusing on the effects of silences, it is also of interest for future research to consider the intentions of those who remained silent. It could be that silences are intentionally imposed upon the deviant, so as to “request” conformity or (more likely) to signal disapproval without harming the relationship. It seems also likely, however, that the audience remains silent for a brief period because it is searching for an appropriate response or because it is surprised by a deviant and therefore unanticipated statement. In this way, norm regulation could be a by-product of naturally occurring behavior and have no intentional component at all (see Pettit, 1993 for a similar reasoning).

Irrespective of the potentially unintentional nature of its effects, conversational silence may provide a mechanism through which social inequalities are maintained. Previous research revealed that nonverbal behaviors differ between members of high and low status within the group (e.g., Leffler, Gillespie, & Conaty, 1982; Smith-Lovin & Robinson, 1992). People high in status talk more, claim more space with their bodies, and attempt more interruptions. Research has shown that these nonverbal behaviors serve to maintain social structures (Dovidio & Ellyson, 1982; Ridgeway, Berger, & Smith, 1985; Sacks, Schegloff, & Jefferson, 1974). A silence, for instance, can be interpreted as a strategic mechanism to maintain (or gain) social control. By responding in silence after someone has given an opinion, high status people can implicitly request conformity to the opinions that they consider normative. Indeed, recent research has shown that silences are experienced as especially disruptive by people who possess a lower status within the group (Koudenburg, Postmes, & Gordijn, 2013c, *Chapter 7*).

Finally, in conversational analysis, two forms of silence have been distinguished. The first concerns a silence that occurs within the turn of a single speaker; the other occurs between two speakers' holdings of the floor (Goffman, 1981). Whereas the first type of silence can be attributed to a single speaker, the latter can be problematic for the relationship between speakers (Koudenburg et al., 2011a, *Chapter 3*). Gibson suggests that turn-taking often occurs by means of allocation of the next speaker (Gibson, 2003, 2005). Within a group, the next speaker is likely to be selected on the basis of friendship or status positions, which suggests a relation between two successive speakers (Gibson, 2005; Robinson & Balkwell, 1995). A silence therefore suggests a literal break in the conversation: The allocated next speaker (be it someone specific or the group) rejects the invitation to speak and therefore undermines the relationship. Moreover, the collective nature of the disruption—a silence only occurs when everybody remains silent—may increase its impact.

In conclusion, this article provides insight into one subtle channel through which groups guide their members to conformity. Counternormative behavior in conversations may be dealt with by rebuking someone or by expressing explicit disagreement; it may be handled by voicing an alternative opinion that the deviant group member can learn from, but it can also be effectively handled without the exchange of any explicit information whatsoever. The data suggest that merely allowing a brief uncomfortable silence to fall may send a strong relational signal that regulates group members' attitudes. For those who are motivated to belong, this subtle signal provides an opportunity to enhance their inclusionary status by accommodating the implicit group norm. Thus, overt actions and explicit utterances are not the only form of behavior of interest in social groups: In many instances, inaction and silence may speak volumes.

Chapter seven

Conversational Flow and Entitativity:
The Role of Status

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Abstract

This paper examines the process by which perceptions of conversational flow foster an emergent sense of group entitativity. We propose that conversational flow influences more than just the quality of interpersonal relations: it signals entitativity--social unity at the group level. We predicted that when conversations are intermitted by brief silences after a target has spoken, this is perceived as disruptive for targets of low social status within the group: For low status group members, such pauses raise concerns over respect and inclusion. However, for high status group members a similar intermission may be interpreted as an acknowledgement of their distinctive position in the group, and may therefore bolster the hierarchy and unity of the group. Two experiments support these hypotheses. Study 1 ($N = 77$) manipulated status in conversations of a target participant with confederates. Study 2 ($N = 138$) replicates the effect among participants who watch a videotaped conversation. Both studies show the predicted pattern, and suggest that belonging (Study 1) and perceived respect (Study 2) may mediate effects of condition on perceptions of group entitativity.

seven

Conversational Flow and Entitativity: The Role of Status

*~ The most important thing in conversation
is to hear what isn't being said. ~*

Peter F. Drucker

seven

Conversations are fundamental to maintaining human relationships: They provide the means to establish bonds, enable one to regulate the relationship, and are the primary means to develop a shared understanding of reality. Research on communication has traditionally focused on the informational influence exerted by the content of communication. However, features of the conversation itself can also be a socially binding force, in and of their own. In the current paper, we explore whether having a conversation that is experienced as smooth, efficient and engaging has consequences beyond the level of “you” and “me”, and engenders a sense of groupiness at the level of “us”. Specifically, we hypothesize that through fostering a sense of belonging and respect, conversational flow enhances perceptions of the group as an entitative social unit. In addition, we examine the novel idea that some specific conversational behaviors may have either positive or negative effects on perceptions of group unity depending on the perceiver's status within the group.

Conversational Flow

In conversations, interpersonal coordination allows for the smooth and efficient exchange of verbal information. Most people are very adept at having conversations: They are able to take turns with minimal gaps in between, resulting in a conversational flow of smoothly meshed behaviors (Wilson & Wilson, 2005). We define conversational flow as the extent to which a conversation is experienced as smooth, efficient

and mutually engaging. In order to have flow in a conversation, group members (often unconsciously) adjust their communication behaviors to one another so that they can switch speaking turns without talking over each other and experiencing awkward silences (Cappella, 1981; Chapple, 1971, Giles, Coupland, & Coupland, 1991).

Many studies have shown that such (conversational) coordination not only facilitates the communication process (Dittmann & Llewellyn, 1968; Marsh, Richardson, & Schmidt, 2009) but also has a communicative function in itself (Kendon, 1970; Bernieri, 1988; Koudenburg, Postmes, & Gordijn, 2011a, *Chapter 3*). Coordination of communicative behaviors is argued to increase the “goodness of fit” between conversation partners (Burgoon & Saine, 1978). Whereas some conversational patterns are experienced as smooth, comfortable and meaningful, others are experienced as awkward, uncomfortable and puzzling (Cappella, 1991). For instance, if a conversation between peers is interrupted by a brief and unexpected silence, this can signal some form of relational breakdown (Koudenburg et al., 2011a, *Chapter 3*). Such a disruption of conversational flow may raise questions about the relationships within the group, not just at the interpersonal level but also at the level of the group as an entity.

Entitativity

Entitativity is defined as degree to which social aggregates are perceived as a cohesive entity (Campbell, 1958). The concept of entitativity is an important determinant of processes within and between groups (e.g., Castano, Yzerbyt, & Bourguignon, 2003; Lickel et al., 2000; Hamilton, Sherman, & Rogers, 2004). Campbell emphasized that communication plays an important part in giving rise to factors (such as common fate and coordinated action) that contribute to perceptions of group entitativity: “For human groups, face-to-face communication processes made possible by proximity generate similarity and feelings of belongingness which make coordinated action and hence common fate more likely” (p. 22, see also Gaertner &

Schopler, 1998; Lickel, Hamilton, Wieczorkowska, Lewis, Sherman, & Uhles, 2000; Prentice, Miller, & Lightdale, 1994).

Prior research has studied the effects of conversational flow on interpersonal perceptions and emotions (Koudenburg et al., 2011a, *Chapter 3*). This work has shown that when conversations among peers are intermitted by a brief silence, this tends to be associated with a drop in the levels of a broad spectrum of positive emotions and an increase in feelings of rejection. It was thus suggested that brief intermissions give rise to exclusion concerns. The inference that we drew from this earlier work was therefore that conversational flow affects social relationships in the interpersonal plane (me and you). But one further notable finding in this research was that when there were no intermissions in the conversation, this also enhanced feelings of social validation. This effect of flow on validation signals that there may be another process at work here. Literatures on shared reality (Echterhoff, Higgins, Groll, 2005; Hardin & Higgins, 1996) and common ground (Clark, 1996) both assume that knowledge is socially validated in social communities (referred to by Clark as “ensembles”). Recent research on social identity formation (Postmes, Haslam, & Swaab, 2005; Smith & Postmes, 2011; Swaab, Postmes, Van Beest, & Spears, 2007) shows that social validation of shared knowledge is associated with a stronger sense of “us”. Thus, it appears that the quality of a conversation (independent of its content) may affect not just relations between individuals, but also give rise to an emergent sense of unity at the group level (see also Gaertner, Iuzzini, Witt, & Oriña, 2006). We hypothesize that conversational flow can increase feelings of belonging within the group, and consequently promote group entitativity.

Nevertheless, the straightforward prediction that uninterrupted conversation enhances group entitativity is likely to be overly simplistic. There are good reasons to believe that not all group members experience the same patterns of conversation as smoothly flowing. We predict that the same conversational patterns may have entirely different meanings depending on a person’s status in the group.

The Role of Status in Intra-Group Conversation

Status plays a very significant but subtle (and often implicit) role in conversation (cf. Ridgeway, Berger, & Smith, 1985; Giles & Powesland, 1975). The literature on communication accommodation (Giles, Mulac, Bradac, & Johnson, 1987; Gregory & Webster, 1996), for instance, revealed that status has a strong influence on behavior during interpersonal communication. However, less research has been conducted on the effect of status on the interpretations of conversational behaviors.

In communication with high status others, people of low status often search for equal treatment and respect (Saguy, Dovidio, & Pratto, 2008). Efforts to synchronize with others in conversation are typically performed by low status people rather than high status people (Giles & Powesland, 1975; Gregory & Webster, 1996). Relatedly, speakers who seek social approval converge more strongly to their partner's vocal intensity and pause length than those low on this need (Giles & Coupland, 1991). In a way, these convergence behaviors of low status people can be seen as an attempt to adjust status differences in order to promote conversational flow. A smoothly running interplay between group members may indicate to low status group members that they are respected and included in the group. Indeed, research has shown that respect enhances a sense of equality and inclusion in the group (Spears, Ellemers, & Doosje, 2005; Renger & Simon, 2011; Huo, Binning, & Molina, 2010). As such, the feelings of respect that arise from conversational flow can contribute to a sense of group entitativity. We expect that low status group members are likely to feel that a conversation has flow when turn-taking continues unintermittedly after they have made a statement. Any ambiguous silences by contrast, might raise concerns about dissensus or exclusion.

Whereas low-status group members may value equality, group members with a higher status may feel that a conversation has flow to the extent that their individual contributions to the conversation are acknowledged. They would find a conversation particularly respectful when other group members listen to them. The dual pathway model of

respect (Huo et al., 2010) suggests that respect can be inferred from inclusion, but that group members – especially when they have a high status – can also obtain respect through their perceived standing and worth in the group (see also Tyler & Smith, 1999; Blincoe & Harris, 2011). In this way, high status group members are expected to feel more comfortable when conversational patterns reflect and respect the social order within the group (Tiedens & Fragale, 2003). Consequently, high status group members may perceive a short pause after they have spoken to be a natural sign of respect as others listen to their important contribution to the conversation. Swiftly continuing the conversation after a high status person has spoken might be seen as dismissive and disrespectful and thus, would subtly undermine the efficiency in the conversation and the social order within the group. Therefore, we expect that for high status group members, a brief silence after their statement promotes conversational flow and the group’s functioning as a coherent social unit. It is thus hypothesized that in some cases, low and high status group members have different perceptions of group entitativity resulting from the same conversational behaviors.

The Present Research

Previous research on conversational flow focused on its effects on interpersonal relations, such as belonging and validation (Koudenburg et al., 2011a; 2013a, *Chapter 3, 4*). The first aim of the present research was to extend these findings by examining whether conversational flow has consequences beyond the level of interpersonal relations and influences perceptions of entitativity at a group level. Second, we explored whether the effect of conversational flow on perceptions of group entitativity was mediated by feelings of belonging. The third aim of this research was to examine whether the effect of manipulating a specific conversational behavior, i.e. a brief silence, was moderated by ones status within the group. We expected that when conversational patterns would fit the social relations within the group, group members would be more likely to experience a conversation as smooth, efficient, and engaging, therefore increasing perceptions of group entitativity. The

fourth and final aim of this research was to examine whether feelings of being respected mediated these effects.

Study 1 was designed to examine the hypothesis that status would moderate the effects of brief intermissions on perceived group entitativity in a quasi-natural setting and to test whether feelings of belonging would mediate these effects. Study 2 examined the same phenomenon in a more controlled experimental setting and tested the mediating role of perceived respect.

Study 1

We tested our hypotheses with a confederate-study in the lab. Status was manipulated by giving participants bogus feedback on an abstract reasoning test, in which they scored either much higher (high status) or much lower (low status) than two other ostensible participants (who were actually confederates). Secondly, we manipulated whether the conversation with these two confederates was intermitted by a brief silence after the participants had given their opinion (silence vs. no silence). Perceptions of group *entitativity* and feelings of *belonging* were measured with a questionnaire.

Methods

Participants. Seventy-seven Dutch students ($M_{\text{age}} = 21.03$, $SD = 2.25$, 53 female) participated in a study for partial course credit or a single reward of 5 euros.

Status manipulation. All original materials were in Dutch and are available from the authors on request. To manipulate status, participants received bogus feedback on an abstract reasoning test. Previous research has shown that previous task performance is an important determinant of group members' level of expertise and status within the group (Bunderson & Barton, 2011; Hollander, 1958). After entering the laboratory, participants were directed to separate rooms to complete an abstract reasoning test. This test consisted of two subtests

of the revised Snijders-Oomen Nonverbal intelligence test (SON-R, Tellegen & Laros, 1993). After the test, participants were told that abstract reasoning skills relate to important characteristics such as intelligence and creativity. Then, each participant was collected from their individual room, and sat down with two other participants (who actually were confederates) on three chairs. The chairs were placed such that conversation partners faced away from each other, in order to minimize non-verbal interaction. When participants were seated, bogus results of the test score were communicated on a paper sheet, which participants passed around. The confederates were instructed not to read the results on the paper, to ensure that they were blind to the status condition of the participant. In the high status condition the participant received a score of 198 points, whereas the confederates received 132 and 121 points respectively. In the low status condition, the participant 'scored' 121 points, and the confederates received 187 and 198 points, respectively.

Silence manipulation. After the abstract reasoning test, participants took part in a conversation with the two confederates (1 male, 1 female) in which silence (silence vs. no silence) was manipulated. Each of the conversants was asked to describe in one sentence their opinion on the topic assigned to them. Confederates were instructed and trained to avoid intermissions in turn-taking and to avoid silences. First, the topics of both confederates were discussed (*higher health insurance premiums for obese people* and *illegal downloading*). When it was the participants' turn to give his or her opinion on the final topic (*wearing headscarves in class*), the confederates either continued the conversation by commenting on similar situations in different countries without intermissions (no silence condition) or they remained silent for four seconds (silence condition) after which they continued the conversation in a way identical to the no silence condition. Thus, in both conditions confederates neither agreed nor disagreed with the participant, but continued the conversation on the topic without revealing their own opinion.

Dependent variables. After the conversation, the participant filled out a paper-and-pencil questionnaire, which the confederates ostensibly filled out in their own rooms. Participants indicated on 7-point scales

the extent to which they agreed with each item (1 = *completely disagree*, 7 = *completely agree*). *Belonging* was measured with 4 items (derived from the Need Threat Scale, Van Beest & Williams, 2006; $\alpha = .60$), for example: “I felt connected to one or more group members”, and “during the conversation, I felt that I belonged”. Additionally, participants completed a 4-item measure of *entitativity* (Jans, Postmes, & Van der Zee, 2011): “I feel the members of this group are a unit”, “I experience a feeling of togetherness between the members of this group”, “I have the feeling the members of this group can act in unison”, and “I feel members of this group are as one” ($\alpha = .82$).

Manipulation checks. In order to check whether participants understood the status manipulation they were asked to rate on a 9-point scale whether their score on the abstract reasoning test was 1 = *lower than* to 9 = *higher than* the score of the other two students. To check the silence manipulation, participants were asked to estimate the number of seconds it took before the other students responded after the participant had given his or her opinion on the topic assigned. After filling out the questionnaire, participants were fully debriefed.

seven

Results

Manipulation checks. The manipulation check for status showed that participants in the high status condition rated their performance on the abstract reasoning test to be significantly higher ($M = 7.41$, $SD = 2.18$) than participants in the low status condition ($M = 2.75$, $SD = 2.30$), $F(1, 73) = 81.82$, $p < .001$, $\eta^2 = .53$. As predicted, neither an effect of silence, nor an interaction between status and silence was found ($F_s < 1$).

To check the silence manipulation, the estimates of the duration between the expressed opinion and the response of the others were log-transformed in order to attain a normal distribution. Participants in the silence condition perceived the time before others responded to be longer ($\text{Duration}_{\text{lg}} = 1.52$) than participants in the no silence condition ($\text{Duration}_{\text{lg}} = 1.07$), $F(1, 72) = 6.50$, $p = .01$, $\eta^2 = .08$. The status main effect and the status by silence interaction were not significant ($F_s < 1$).

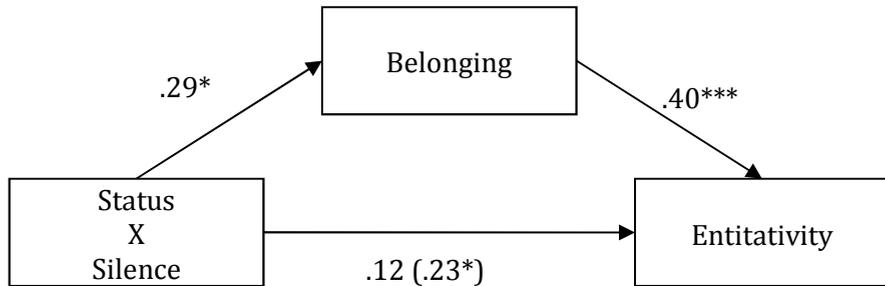
Belonging. The means are summarized in Table 7.1. No main effects of status and silence on belonging were found, ($F_s < 1.4$). However, a significant status by silence interaction was found, $F(1, 73) = 6.65, p = .01, \eta^2 = .08$. Simple main analysis showed that participants in the high status condition felt more belonging to the group when conversation was intermitted with a brief silence after they had made a statement, rather than when the conversation continued without a silence, $F(1, 73) = 7.56, p = .008, \eta^2 = .09$. In the low status condition, no such effect was found.

Entitativity. Similarly, analysis of variance showed no main effect of silence or status on perceptions of group entitativity ($F_s < 1$). However, there was a significant interaction between status and silence, $F(1, 73) = 4.19, p = .04, \eta^2 = .05$. Although individual simple main effects were not significant, the pattern was consistent with the predictions: Participants in the low status condition perceived the group to be more entitative in the no silence condition (vs. silence condition), $F(1, 73) = 2.00, p = .16, \eta^2 = .03$, whereas participants in the high status condition perceived the group as more entitative when conversation was intermitted with a silence, rather than when no silence was present, $F(1, 73) = 2.21, p = .14, \eta^2 = .03$.

Table 7.1 Means (*SDs*) for perceived entitativity and belonging for group members of high and low status in conversations which are either intermitted by a brief silence, or not intermitted in Study 1.

	Low Status		High Status	
	No silence (n = 18)	Silence (n = 20)	No silence (n = 18)	Silence (n = 21)
Entitativity	3.57 (.96)	3.07 (1.06)	2.90 (.96)	3.39 (1.22)
Belonging	5.21 (1.03)	4.93 (.57)	4.55 (.94)	5.30 (.87)

Figure 7.1. Feelings of belonging mediate the effect of the status by silence interaction on entitativity in Study 1. Note: Values represent standardized regression coefficients, * $p < .05$, *** $p < .001$.



Mediation. To establish whether the interaction effect of silence (-1 = no silence, 1 = silence) and status (-1 = low status, 1 = high status) on perceived group entitativity was mediated by feelings of belonging, an explorative mediated moderation analysis was conducted (Muller, Judd, & Yzerbyt, 2005). Feelings of belonging significantly predicted perceptions of group entitativity ($B = .40$, $t(73) = 3.54$, $p = .001$). Furthermore, the effect of the status by silence interaction on perceived group entitativity ($B = .23$, $t(73) = 2.05$, $p = .04$) was significantly reduced when belonging was added as a mediator to the model ($B = .12$, $t(72) = 1.09$, ns), Sobel $Z = 2.09$, $p = .04$, see Figure 7.1.

Discussion

Results confirm the hypothesized pattern that for low status group members, conversational silences may decrease perceptions of group entitativity. For high status group members, however, it seems that a brief intermission in a conversation increases perceptions of group entitativity. For low status group members, we did not replicate the negative effects of pausing on feelings of belonging that was found among peers in previous research (Koudenburg et al., 2011a, *Chapter 3*).

Interestingly however, silences appeared to have a positive effect on the feelings of belonging of high status group members, suggesting that

the interpretation of conversational behaviors is contingent upon one's status in the group. These effects on feelings of belonging were found to mediate the effects of conversational flow on perceived group entitativity.

There are many uncontrollable factors in an experiment based on actual conversations that may have interfered with and thus somewhat reduced the impact of the manipulations. For instance, the contributions of participants to the conversation may have differed (e.g. different opinions, different degree of participation), increasing the level of random noise in the data. This can potentially explain the marginal differences on the measures of entitativity between the two silence conditions. A second study sought more control over these factors, to more clearly and cleanly establish the effects of silence and status on perceptions of group entitativity.

Study 2

To examine whether perceived respect was responsible for the effects on perceived group entitativity, a second experiment was designed in a more controlled setting, using a video-paradigm. The video paradigm had two important benefits: First, it allowed for greater control over the content and non-verbal behaviors of the communicators, as it removed the problem of confederates having to act identically and it removed the influence of idiosyncratic actions of the participant. Second, it allowed for a more natural and engaging social interaction. However, it also required that participants imagined themselves in the conversation making it less directly personally relevant. By using two paradigms with different strengths and weaknesses we aimed to provide the most optimal test of our hypothesis. In addition, Study 2 included a measure of perceived conversational flow, to test whether perceptions of conversational flow differ as a function of whether conversational patterns fit the social relations within the group.

We reasoned that low status group members would feel respected in a conversation in which responses of group members followed immediately after each other without any silences, and that this perceived respect would be a major factor in determining whether they would perceive the group to be entitative or not. For high status group members, however, it was expected that a lack of silences would not increase their perceptions of respect. Instead, high status group members would feel that when other group members continued unintermittedly after they had spoken, this would undermine the social order, decrease perceived conversational flow, and therefore the perceived entitativity of the group.

Methods

Participants. Participants were 138 Dutch students in social sciences who were randomly assigned to conditions in which silence (silence vs. no silence) and status (high vs. low status) were manipulated. Participants ($M_{\text{age}} = 20.46$, $SD = 2.09$, 95 female) received a single reward of 4 euro or participated for partial course credit.

Status manipulation. All original materials were in Dutch and are available from the authors on request. Participants watched a video in which three students had a conversation. Before the video was started, participants were asked to imagine being Vera, one of the students. In the high status condition, Vera was described as being a master's student in clinical psychology, who had a conversation with two first year bachelor's students. In the low status condition, Vera was described as being a first year bachelor's student in conversation with two master's students in clinical psychology.

Silence manipulation. After about four minutes, the students started conversing about a famous TV personality, who was depressed and received antidepressants. Vera said: "One million Dutch inhabitants are prescribed antidepressants and this is an absurdly high number. I think that doctors too often prescribe antidepressants to people who only seem a little depressed." In the no silence condition, the conversation continued unintermittedly with further commentary on the TV personality, with no reference being made to Vera's statement. In

the silence condition, it remained silent for four seconds, after which the conversation continued. Except for the subtle editing of the duration of this single silence so that no discontinuities were discernible, the two videos were identical. A similar manipulation of silence has shown to be effective in previous studies (Koudenburg et al., 2011a; Koudenburg, Postmes, & Gordijn, 2013b, *Chapter 3*, 5).

Dependent variables. After watching the video, participants filled out a questionnaire on the computer. Perceptions of conversational flow were measured with two items: Participants indicated on 7-point scales to what extent they thought the conversation was smooth/engaging (1 = *certainly not*, 7 = *certainly*; $\alpha = .70$). Respect was also measured with two items: "I felt respected by the other group members" (1 = *strongly disagree*, 7 = *strongly agree*) and "to what extent do you think the other group members respected you?" (1 = *certainly not*, 7 = *certainly*; $\alpha = .82$). Perceptions of group entitativity and feelings of belonging were measured with the same questionnaire as in Study 1 (α 's = .83 and .78, respectively).

To check the status manipulation, participants rated to what extent they knew more than the other students, to what extent the other students had more expertise than them (reverse scored) and to what extent they felt that they had more prestige than the other students (1 = *certainly not*, 7 = *certainly*; $\alpha = .62$).

To check the silence manipulation, participants indicated to what extent they had the feeling that there were silences in the conversation (1 = *not at all*, 7 = *strongly*).

Results

One outlier on the measure of respect (Standardized Residual >3) was removed from the analysis.

Manipulation checks. The status manipulation check revealed that participants in the high status condition experienced significantly higher status than participants in the low status condition, $F(1, 133) = 44.40$, $p < .001$, $\eta^2 = .25$. As predicted, neither an effect of silence, nor an interaction between status and silence was found (F 's < .1).

The manipulation check of silence revealed the intended effect of silence, $F(1, 133) = 71.49, p < .001, \eta^2 = .35$, but no effects of status or the status by silence interaction ($F_s < 1.47$). Participants in the silence condition had a stronger sense that there were silences in the conversation than participants in the no silence condition.

Conversational flow. Means are summarized in Table 7.2. Status had a negative effect on perceptions of conversational flow, $F(1, 133) = 8.93, p = .003, \eta^2 = .06$, and silence had no impact on perceptions of conversational flow, ($F < 1$). Importantly, the main effect of status was qualified by a significant interaction, $F(1, 133) = 7.42, p = .007, \eta^2 = .05$. Simple main effect analysis revealed that participants in the low status condition perceived marginally less conversational flow in the silence condition than in the no silence condition, $F(1, 133) = 3.12, p = .08, \eta^2 = .02$. In the high status condition however, participants perceived more conversational flow in the silence condition than in the no silence condition, $F(1, 133) = 4.34, p = .04, \eta^2 = .03$.

Belonging. A marginally significant main effect of status on belonging was found, $F(1, 133) = 3.33, p = .07, \eta^2 = .02$, suggesting that participants in the low status condition felt more belonging to the group than those in a high status condition. The main effect for silence and the silence by status interaction were not significant, $F_s < 1, ns$.

Perceived respect. An analysis of variance on respect showed no main effect of silence or status on perceived respect ($F_s < 1$). However, the predicted status by silence interaction was found, $F(1, 133) = 5.86, p = .02, \eta^2 = .04$. Simple main effects showed that for participants in the low status condition, perceived respect was higher when there was no intermission compared with when the conversation was intermitted by a brief silence, $F(1, 133) = 5.69, p = .02, \eta^2 = .04$. For those in the high status condition, no such difference was found ($F < 1.2$).

Entitativity. As predicted, an analysis of variance showed no main effect of silence ($F < 1$) on perceived group entitativity. A marginal main effect of status on entitativity was found, $F(1, 133) = 3.16, p = .08, \eta^2 = .02$, such that participants in the low status condition perceived the group to be more entitative than participants in the high status condition. However, this main effect was qualified by the predicted

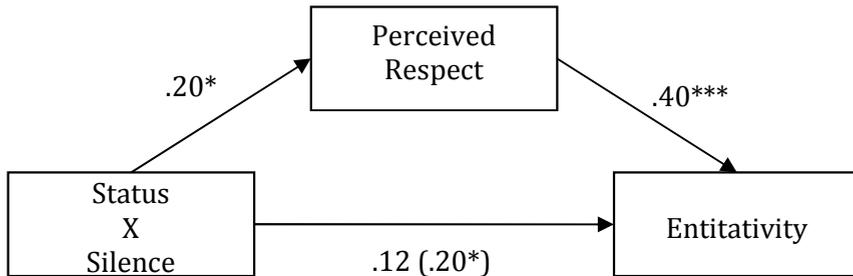
interaction of status and silence, $F(1, 133) = 5.65, p = .02, \eta^2 = .04$. Simple main effects revealed that for participants in the low status condition, group entitativity was perceived to be marginally higher when no silence was present rather than when conversation was intermitted by a brief silence, $F(1, 133) = 3.37, p = .07, \eta^2 = .03$. For participants in the high status condition no significant difference was found, although means were in the predicted direction, $F(1, 133) = 2.34, p = .13, \eta^2 = .02$.

Table 7.2 Means (*SDs*) for perceived conversational flow, perceived group entitativity, belonging and perceived respect for group members of high and low status in conversations which are either intermitted by a brief silence, or not intermitted in Study 2.

	Low Status		High Status	
	No Silence (n = 37)	Silence (n = 34)	No Silence (n = 33)	Silence (n = 33)
Perceived flow	5.47 (.87)	5.05 (.87)	4.49 (1.29)	5.00 (.95)
Entitativity	4.77 (.87)	4.09 (.87)	4.34 (.92)	4.45 (1.16)
Belonging	3.74 (.53)	3.49 (.55)	3.70 (.47)	3.62 (.55)
Respect	5.64 (.69)	5.12 (.98)	5.12 (.89)	5.35 (1.02)

Mediation. To establish whether the interaction effect of silence (-1 = no silence, 1 = silence) and status (-1 = low status, 1 = high status) on perceptions of group entitativity was mediated by perceived respect, a mediated moderation analysis was conducted (Muller, Judd, & Yzerbyt, 2005). Feelings of respect significantly predicted perceived group entitativity ($B = .40, t(73) = 5.10, p < .001$). Furthermore, the effect of the status by silence interaction on perceived group entitativity ($B = .20, t(73) = 2.38, p = .02$) was significantly reduced when respect was added as a mediator to the model ($B = .12, t(72) = 1.49, ns$), Sobel $Z = 2.18, p = .03$, see Figure 7.2.

Figure 7.2. Perceived respect mediates the effect of the status by silence interaction on entitativity in Study 2. Note: Values represent standardized regression coefficients, * $p < .05$, *** $p < .001$.



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Discussion

Study 2 provides complementary evidence for the pattern revealed in Study 1, namely that for group members with a low status, but not for those with a high status, uninterrupted conversation increases perceptions of the group as an entitative unit. In addition Study 2 reveals that, as predicted, respect statistically mediates this effect: Whereas low status-group members feel that a pattern of uninterrupted turn-taking signals that they are respected members, and thus experience the group as being more of an entity, high status group members do not feel that way. If anything, the direction of the effects for high status group members suggest that a lack of pausing reduces perceptions of group entitativity.

Study 2 did not replicate the interaction effect on feelings of belonging that was found in Study 1. It is likely that watching conversational patterns on video while imagining being one of the communicators does not induce the same feelings of belonging as being in the conversation oneself, as was the case in Study 1. Whereas respect and group entitativity may be more easily observed by outsiders taking the perspective of a high or low status group member, feelings of belonging are possibly more difficult to induce by perspective taking.

General Discussion

Two studies examined the influence of conversational flow on perceptions of group entitativity for group members of different status. Study 1 reveals a pattern suggesting that uninterrupted conversation leads to higher perceptions of group entitativity amongst low-status group members, but to higher perceptions of group entitativity amongst high status group members. In addition, Study 1 shows that for high status group members, but not for low status group members, interrupted conversation increases feelings of belonging and that these feelings mediate the effects on perceived group entitativity. Study 2 replicates the effect on perceived group entitativity, by showing the same pattern of interaction with means in the predicted directions. In addition, Study 2 identifies perceived respect as a mediator of these effects: Low status group members, but not high status group members, feel more respected in a conversation in which turn-taking occurs uninterruptedly, and this in turn covaries with higher perceptions of group entitativity. Together, the studies provide complementary evidence showing that the same conversational behaviors (i.e. a brief silence) can have different consequences for the unity in the group depending on a member's status.

The present research shows that low status group members feel that a conversation has flow when conversation continues uninterruptedly after they have made a statement, such that no ambiguous silences are allowed to raise concerns about dissensus or exclusion. This conversational flow leads low status group members to feel respected as a group member (Study 2), and this is associated with their enhanced perceptions of the group as a coherent social unit (Studies 1 and 2). The results thus show that the influence of conversational flow goes beyond the level of interpersonal relations, to higher order effects on perceptions of group entitativity.

However, in our studies we did not simply find that the same conversational patterns always lead to higher perceptions of group entitativity. Instead, we found that the effects of brief conversational silences on perceived group entitativity are moderated by status. That

is, for high status group members it is *not* the case that they perceive the group to be more entitative when conversation occurs unintermittedly. On the contrary, Study 1 shows that for high status group members, a brief conversational silence after they have spoken positively affects feelings of belonging, which in turn lead to higher perceptions of group entitativity.

The finding that interaction between individual group members can lead to higher order representations of the group as an entity is in line with previous research (e.g., Gaertner & Schopler, 1998). We extend this research by showing that not all conversation is equally likely to increase perceptions of group entitativity: Specific conversational qualities and structural relations within the group influence whether the group is likely to be perceived as a coherent social unit. Some researchers acknowledge the effect of perceiver characteristics (i.e. need for closure, individualism-collectivism) in their motivation to see group entitativity (Brewer & Harasty, 1996; Triandis, 1995; Webster & Kruglanski, 1994), but here, the focus is on the motivation of external observers. The present research shows that underlying structural relations in a group influence how communication frames social processes, and therefore, how group members perceive social cohesion.

The current research also extends previous findings on conversational flow disruptions in groups with equal status members (Koudenburg et al., 2011a; 2013a, *Chapter 3, 4*). Previous research found that conversation that was intermitted with a single silence threatened belongingness and validation needs. For low status group members in the current research, the negative effects of silences for feelings of belonging were not significantly replicated. Possibly, low status group members in the present research were not as emotionally affected by the silence on this particular dependent variable as were group members without status differences in the previous research (and notable is that in Study 1 participants were assigned a topic to talk about that may not have been as personally engaging). However, low status group members did experience less conversational flow (Study 2) and perceived less group entitativity (Study 1 & 2) after a silence, suggesting that silences are perceived negatively, overall.

An interesting question is what the relation is between effects of conversational flow on interpersonal bonds and social validation (Koudenburg et al., 2011a, *Chapter 3*), as well as belongingness and the emergent sense of groupiness at the overarching level of “us” (this chapter). The literature has traditionally emphasized the distinctions between interpersonal attraction, cohesion and social identification (e.g., Hogg, 1992). Whereas cohesion is concerned with the relations within the group (i.e., at the interpersonal level), entitativity is defined as group unity at the collective or group level. In this framework, identification describes the relation of one particular individual to the group as an entity (Jans et al., 2011). More recently, research has begun to examine the recursive relationships among these concepts (e.g., Gaertner et al., 2006; Postmes et al., 2005). This work extends that line of thought. Across the current studies, we found evidence that a sense of unity at the group level can stem from the flow of a conversation between three individuals. Although we did not test this in the present studies, other research suggests that perceptions of entitativity may be a precursor of ingroup identification (Castano et al., 2003; Jans et al., 2011), positive ingroup regard (Gaertner et al., 2006; Lickel et al., 2000) and stereotyping (e.g. Hamilton et al., 2004).

In the present research, conversational flow was manipulated by only a single brief period of silence. At one level, this is a limitation: Conversational flow is a dynamic process, and thus a single-instance manipulation strictly speaking may not be sufficient. In some of our current research we are implementing delays between when a sound is produced by the speaker, and when it is heard by the listener during conversations via headsets (Koudenburg, Postmes, & Gordijn, 2013a, *Chapter 4*). We find that such a dynamic manipulation of conversational flow which occurs throughout the conversation has broadly similar effects to prior findings using a single instance of silence (Koudenburg et al., 2011a, *Chapter 3*). But using a single silence also has advantages: It increases experimental control over the exact point at which the conversation is intermitted, and therefore limits the possible explanations for the silence. In addition, it allows for minimization of the cross-condition differences during the rest of the conversation. We regard this a conservative test of the hypotheses: Stronger effects would

be expected when using a less subtle manipulation across the course of the conversation (Koudenburg et al., 2013a, *Chapter 4*).

The present research extends previous research that examined conversational flow in videotaped conversations and scenarios (Koudenburg et al., 2011a, *Chapter 3*) by studying the effects of conversational flow also in actual conversations (Study 1). Most of the effects were consistent across the video-study and the confederate-study, increasing the external validity and generalizability of the results. However, the generalizability may be limited by the fact that the present research examined only conversations among people with limited prior acquaintance. It is possible that intermissions are experienced differently if the conversation partners know each other for a long time.

In this research we did not examine the participants' attributions for the silence directly (but see Koudenburg et al., 2011a, *Chapter 3*). The findings for respect are consistent with our prediction that low status group members feel that they are respected elements of the group when their utterances do not result in a conversational pause. But low status group members may also feel that a pause after they have said something indicates that others think they have said something inadequate or incompetent. As such, results for the low status group in particular could be influenced not just by perceptions of respect, but also by feelings of (in)competence. Although this alternative explanation should be addressed empirically, we can infer from prior research that competence feedback has less of an impact on feelings of group commitment compared with feedback that indicates the group respects the person because he or she is liked (Spears et al., 2005). In other words, the emotional consequences of feeling respected because one is liked appear to be more likely to affect the evaluation of groups than competence.

We see the present research as somewhat related to prior research that has demonstrated a link between synchrony and perceptions of entitativity (Bernieri, 1988; Marsh et al. 2009; LaFrance, 1985; Lakens, 2010). It is interesting to note that conversational flow is subtly different from other forms of synchrony in which actors co-act simultaneously and rhythmically: Smoothly meshed turn-taking is certainly a form of coordinated action, but it is one in which actions

alternate. And yet, it appears that more heterogeneous forms of coordinated action can lead to the experience of group entitativity, just as more homogeneous co-action can (cf. Campbell, 1958). Indeed, the idea that group unity can stem from co-action as much as coordinated action is implied in Durkheim's (1893 [1984]) distinction between mechanical solidarity – a sense of unity that is based on similarities amongst citizens – and organic solidarity – unity based on complementarity of actors. An example may illustrate the idea: people may certainly experience entitativity when they are line-dancing, an activity in which a whole social unit makes movements that are similar and synchronous. But group entitativity can also be achieved in more complex dance-forms, such as modern dance, in which a more diverse pattern of alternating behavior is enacted within a shared rhythmic and cultural framework. Here, it is the smoothly meshed complementarity of the dancers' moves in relation to each other that increases the perceived entitativity of the social unit. To disentangle the influence that these different elements (the synchronized co-action, the cultural framework within which it occurs) have on the emergence of a sense of unity would thus appear to be an important focus for future research.

To conclude, the current research underlines the importance of conversational characteristics – other than content – for the regulation of relationships, not just at the interpersonal level but also at the overarching level of constructing a shared sense of “us”. It shows that the same conversational patterns can lead to different perceptions of conversational flow, and therefore to different conclusions about the group unity, depending on whether these conclusions are drawn by a high or a low status group member. For low status group members, uninterrupted conversation signals group unity, whereas for high status group members, unity is experienced when their contribution to the discussion is met with a brief pause. In both cases, the underlying reason that high status and low status members react in this way may well be because they would like the flow of the conversation to reflect and respect the social order (cf. Tiedens & Fragale, 2003). The meanings attributed to silence in conversations underlines that there is more to a conversation than the words that are spoken between a source and a target.

Chapter eight

“More than Words”:

Social Validation in Close Relationships

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Abstract

An increasing part of communication between close partners is mediated by audiovisual channels (e.g., video conferencing, VOIP). Therefore, it is important to understand the social consequences of channel disturbances, such as a delay in “the line”. Research among previously unacquainted individuals has revealed that brief disruptions in conversational flow (e.g. silences or delays in mediated communication) threaten core social needs (Koudenburg, Postmes, & Gordijn, 2011a; 2013a, *Chapter 3, 4*). The present research examines the consequences of flow disruptions in close relationships. We hypothesized that when a relationship is perceived as stable and strong, partners may believe that ‘no words are needed’ and rely more on their sense of shared reality. We reasoned that when flow disruptions occurred, close relationship partners would rely on this shared reality and therefore paradoxically foster a sense of social validation. Data from a survey study (n = 252), a laboratory experiment (n = 74), and a field experiment (n = 130) were consistent with this hypothesis.

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*“More Than Words”:
Social Validation in Close Relationships*

Communication is often said to lie at the heart of every solid social relationship. The increasing availability of mediated communication such as telephone or video-conferencing makes a small chat with close friends or loved ones accessible at every point in time. However, with the introduction of mediated communication, conversations become more susceptible to disturbances, such as brief delays on the line. Previous research indicates that disruptions of conversational flow raise questions about the quality of relationships and the consensus between people (Koudenburg, Postmes, & Gordijn, 2011a; 2013a, *Chapter 3, 4*). But this prior research only studied conversations between people with no a priori acquaintance. In close relationships however, flow disruptions may be less disconcerting. Once solid bonds have been established, people may feel that no words are needed to understand each other. Indeed, research shows that romantic partners believe to be able to capture each other’s thoughts and expect to hold similar views (Sillars, 1985; Swann & Gill, 1997; Vorauer & Cameron, 2002). Thus, when people experience a sense of *shared reality* with close friends or loved ones, this may mean that smooth communication becomes less important. It could even suggest that disrupted conversations provide close partners with the possibility to increase their sense of social validation, as people fall back upon their sense of shared reality when their partners’ viewpoints are difficult to access. This is what we examined in the current research.

Disruptions of Conversational Flow

People possess a complex set of conversational skills that allows them to take turns with excellent precision (Clark, 1996; Schegloff, 2007; Wilson & Wilson; 2005). For instance, communicators take into

account the actions of their communication partners when planning and performing their own actions (Clark, 1996). In addition, they adjust their vocal intensity, pause length, and language use to their partner, in order to develop a common framework for communication (Giles & Coupland, 1991). Through such close coordination of speech acts, people are often able to minimize the duration of between-turn gaps to less than two tenth of a second (Jefferson, 1986). When turn-taking occurs in a smooth, efficient and effortless manner, a conversation is said to have flow (Cappella, 1981; Chapple, 1971; Koudenburg et al., 2013a; 2013c, *Chapter 4*, 7). Besides facilitating interaction, attaining conversational flow serves a communicative function in and of itself: Research has shown that when conversation between previously unacquainted people smoothly flows, this brings about a feeling of social unity. Disrupting this flow, for instance by a brief conversational silence, can negatively affect this sense of unity and threaten fundamental social needs, such as the need to belong (Koudenburg et al., 2011a; 2013a; 2013b; 2013c).

In addition to fostering a sense of belonging, research suggests that a smooth alternation of speaking turns between strangers increases the feeling of being on the same wavelength with one another, and therefore encourage feelings of social validation (Koudenburg et al; 2011a; 2013a, *Chapter 3*, 4). In other words, conversational flow can foster the emergence of a subjectively shared reality, which is central to the development of meaningful relationships (Berger & Kellner, 1964; Clark, 1996; Echterhoff, Higgins, & Levine, 2009; Kashima, Klein, & Clark, 2007).

It is however unclear how flow disruptions impact on social validation, once meaningful relationships have been established. We predict that for people in close relationships disruptions in conversational flow may serve to maintain high levels of shared reality.

Shared Reality in Relationships

With increasing time spent together, individuals gain more insight into each other (Funder & Colvin, 1988; Thomas & Fletcher, 2003). For

partners in close relationships, communication serves as a vehicle to acquire mutual understanding and to establish a sense of shared reality (Berger & Calabrese, 1975; Hardin & Conley, 2001; Heider, 1958). The achievement of common understanding serves two important social goals: First, it allows people to establish, maintain and regulate interpersonal relationships (see also Swaab, Postmes, Van Beest, & Spears, 2007). Second, it enables people to perceive the environment as stable, predictable, and to some extent controllable, thereby satisfying the need for validation (Echterhoff et al., 2009; Hardin & Higgins, 1996; Hardin & Conley, 2001).

Whereas the establishment of a shared reality in close relationships may partly result from a process of actual consensualisation of beliefs (Davis & Rusbult, 2001) and the development of shared memory schemes (Wegner, Giuliano, & Hertel, 1985); another part of the shared reality occurs in the eye of the beholder. Research shows that people in general, but romantic partners in particular, project their own views onto their partners, thereby overestimating the degree of similarity between oneself and one's partner (Heider, 1958; Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002; Newcomb, 1968; Ross, Greene, & House, 1977; Sillars, 1985).

The social construction of reality provides intimates with a sense of security and social validation (Ickes & Simpson, 1997; 2001; Murray et al., 2002). In fact, research suggests that rather than actual understanding between intimates, it is especially the *perception* of being understood that serves positive outcomes for both personal and relational wellbeing (Acitelli, Douvan, & Veroff, 1993; Finkenauer & Righetti, 2011; Pollmann & Finkenauer, 2009; Reis, Clark, & Holmes, 2004; Reis & Shaver, 1988). As a consequence however, the overestimation of mutual agreement within a relationship may lead to a reduction in actual perspective taking. This process is reinforced by a reduced need for communication between partners, once they believe that they understand each other (Berger, 1979; Berger & Calabrese, 1975).

These studies suggest that a paradoxical effect may exist: A lack of communication may serve to maintain a high level of shared reality. Because disrupted communication can impede participants' ability to

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assess actual agreement with their partners, participants are likely to fall back upon the shared reality they have established within their relationship. Their beliefs about their relationship (e.g. attitude similarity, mutual agreement) may inform them on how to interpret disruptions of flow, or silences, within the communication. In the context of mutual understanding, flow disruptions may be perceived as validating: They signal that partners understand one another. Thus rather than implying disagreement, for people in close relationships a lack of conversational flow may paradoxically enforce their sense of shared cognition and with that, encourage a feeling of social validation.

The Role of Relationship Stability and Strength

The present research examines whether in close relationships, a sense of shared cognition informs people about the consensus within the relationship and the validity of their ideas, when actual information on the personal standpoints of others is more difficult to access. In fact, we predict that the disrupted conversational flow provides individuals with more scope for interpreting the ideas of the other and therefore increases feelings of social validation. However, this could of course only work when the relation is experienced as stable and strong. Especially in secure relationships, people are likely to experience a sense of shared reality and overestimate the similarity of others' ideas to their own ideas (cf., Berger, 1979; Murray et al., 2002). However, when the level of security in a relationship is low, for instance because the relationship is perceived to be unstable and weak, a brief disruption of conversational flow may be experienced as threatening. In this case, people are likely to search for cues that inform them about the status of their relationship (Berger & Calabrese, 1975; Kerr & Levine 2008; Pickett, Gardner, & Knowles, 2004). A brief delay or silence may serve as such a cue, as it disrupts the smoothly flowing conversation that is likely to represent a state of harmony and consensus (Koudenburg et al., 2011a; 2013b; 2013c, *Chapter 3, 6, 7*).

The Present Research

The present research tests the effects of disruptions of conversational flow on feelings of shared cognition and social validation within close relationships. We examine whether perceptions of relationship stability and strength moderate the effect of conversational flow on shared cognition. More specifically, we predict that individuals who perceive their relationship as weak or unstable perceive disruptions of conversational flow as strangers would: As a signal of decreased shared cognition, which could invalidate their viewpoints. However, individuals who perceive their relationship as stable and strong are not expected to perceive disruptions of conversational flow so negatively. Instead, when conversational flow is lacking, they use their positive feelings about their relationship to fill in the communicational gaps, resulting in an *increased* sense of shared cognition and social validation. When conversation has flow, we expect no influence of relationship strength and stability perceptions.

The hypotheses are tested in different samples, with different disruptions of conversational flow. Study 1 was conducted using an online sample of people involved in a romantic relationship (N = 273). We assessed whether perceived relationship stability predicted whether brief conversational silences would be interpreted as confirmation. Perceived relationship stability was operationalized as the perceived satisfaction of the romantic partner. In addition, we assessed whether a sense of shared identity mediated the effect of relationship stability on the interpretation of silences.

In Study 2, romantic couples participated in a laboratory experiment, in which they were asked to have a conversation via headsets. We manipulated the extent to which the conversation had flow by delaying auditory feedback throughout the second half of the conversation, i.e. participants either heard each other with 1s delay (disrupted flow condition), or they conversed in real time (flow condition). Perceived satisfaction of the romantic partner before the conversation was again used as an indicator for relationship stability. Feelings of social validation and shared cognition were assessed after the conversation.

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Study 3 was aimed at testing the generalizability of the findings. To this end, we conducted a field experiment, which used a method similar to Study 2 now including not only romantic couples, but dyads in any kind of close relationships (i.e. parent-child relationships, friend-ships). In addition, in Study 3 participants communicated via both visual and audio channels. Because Study 3 included dyads in relationships other than romantic, we used a more general measure of relationship strength to test whether this would moderate the effect of flow disruptions. Relationship strength was measured before the conversation; shared identity and social validation were measured afterwards.

Study 1

Methods

Sample. Participants were recruited via diverse online forums ($n = 263$) and a participant pool for undergraduate students in the Netherlands ($n = 10$). We specifically asked people who were currently engaged in a romantic relationship to participate in an online study. The total sample consisted of 273 participants who completed the questionnaire, with a mean age of 24.91 ($SD = 6.86$), and 80% female participants. Participants came from different backgrounds, with 43% Caucasian American, 11% Dutch, 7% German, 7% African American, and 32% from other backgrounds. The sample included 240 participants in heterosexual relationships, 6 participants in homosexual relationships and 5 participants who did not indicate their own or their partners' gender. On average, participants had been in a relationship for 4.94 years²² ($SD = 3.25$), and 51 participants indicated to be married, 67 participants were cohabiting, but not married, and 131 participants were neither married nor cohabiting. Seventeen participants indicated not being currently in a relationship, their cases were removed before further analysis. In addition, we excluded participants who reported not

²² Through a programming error, participants could not select options >13 years of relationship duration. 14 participants indicated that they had been in a relationship for 13 years, but it is likely that this was in fact longer. The average reported here may therefore be a slight underestimation.

filling out the questionnaire in a serious manner ($n = 2$), or had no variation in their scores ($n = 2$). The analyses were based on the remaining 252 participants.

Measures. Participants completed the following measures online: Perceived relationship stability, shared identity, and shared cognition.²³ First, we assessed participants' perceptions of their partner's satisfaction with the relationship, as an indicator of perceived relationship stability (4 items, e.g. "My current partner feels strongly connected to me", "It is likely that my partner will terminate our relationship within the next 6 months"- reverse coded, $\alpha = .85$). Then, participants completed the shared identity scale, which assesses the level of shared identity by means of two statements (i.e. "my partner and I belong to the same group") and three visual representations of socially shared identities ($\alpha = .79$; Tanis & Postmes, 2008). Shared cognition was measured by assessing participants' agreement with three items: "My partner and I were on the same wavelength", "My partner and I understood each other", "My partner and I had the feeling we agreed" ($\alpha = .91$, Koudenburg et al., 2013a, *Chapter 4*).

Finally, we constructed a measure to assess the participants' interpretations of disruptions of conversational flow. We developed 20 items, which related different disruptions of conversational flow (e.g., brief silences, starting to speak at the same time) to an interpretation or consequence (e.g., misunderstanding, disagreement, validation). An example item is: "When my partner briefly remains silent after I said something, I have the feeling that he/she disagrees". Items on all variables were measured on 7-point likert scales ranging from 1 = *strongly disagree*, to 7 = *strongly agree*. We deliberately formulated a broad range of items: This would allow us to identify the factor structure of disrupted flow experience, should it not be uni-dimensional.

Factor Analysis. We used exploratory factor analysis (EFA) to construct a scale for the disrupted flow experience. In the factor analysis, we included the 20 constructed items, as well as the three items for shared cognition and the four items for perceived relationship

²³ We also measured participants' own relationship satisfaction and their feelings of entitativity. Because these variables are not of main interest to the current research question, we do not report them here. Further information is available upon request.

stability. These latter two scales were included to establish the discriminant validity of the scale. We used the *psych* package in the program *R* to perform Principal Axis Factoring with *promax* rotation as recommended by Russell (2002). Oblique rotation was used, since we assumed that the factors could be correlated with each other. Initial EFA's indicated that 11 of the 20 disrupted flow experience questions loaded $< .4$ on each of the factors and thus had low explanatory value in the factor analysis. Therefore, we chose to exclude these items from all EFA's, thereby enhancing interpretation of the factor solutions. Additionally, one item had cross-loading structure coefficients on various factors, with 23% overlapping variance and a relatively low factor loading (.43), and was therefore also excluded from the EFA.

Thus, the final EFA was performed on 15 items, for a sample of 236 participants²⁴ (See Table 8.1). We based the number of factors that should be extracted on different criteria: The Scree plot (Cattell, 1966), Eigenvalues $>$ mean (Velicer, 1976), Parallel analysis (Horn, 1965), and optimal coordinates (Raiche, Roipel, and Blais, 2006). Each of these criteria suggested that 4 factors should be extracted. Eigenvalues ranged from 2.47 to 1.64, and the cumulative percentage of explained variance is 59.2%. Correlations between the four factors ranged from .11 to .61. Two factors extracted the items for perceived relationship stability (Factor 1) and shared cognition (Factor 3). Five items loaded highly on Factor 2, and these were items in which disruptions of flow were perceived *negatively* (i.e. "When my partner and I are quiet for a moment, we often have a different view on the subject."). Three items in which disruptions of flow were experienced *positively* loaded highly on Factor 4 (i.e. "When my partner briefly remains silent after I said something, I feel reaffirmed."). We constructed two scales for the interpretations of flow disruptions based upon these factors, by averaging the scores on the items that loaded on each of the factors. A 5-item *Disrupted Flow Experience-Negative* (DFE-Negative, $\alpha = .81$) and a 3-item *Disrupted Flow Experience-Positive* scale (DFE-Positive, $\alpha = .77$).

²⁴ Because exploratory factor analysis in *R* does not allow missing data, the analysis reported here excluded cases with missing values ($n = 16$). In the remaining analyses, these cases are included again.

Table 8.1. EFA pattern coefficients (Promax; Study 1).

	F1	F2	F3	F4	<i>h</i> ²
<i>Factor 1 [Relationship Stability]</i>					
My current partner feels strongly connected with me.	.85				.79
My current partner thinks that our relationship is worthwhile.	.92				.78
In general my partner is satisfied with our relationship.	.77				.75
It is very likely that my partner will break up with me within the next 6 months.	-.56				.29
<i>Factor 2 [Disrupted Flow-Negative]</i>					
When my partner is quiet after I said something, this is a sign of misunderstanding.		.61			.37
When my partner and I are quiet for a moment, we often have a different view on the subject.		.86			.66
When my partner and I take turns quickly, that often is because we disagree.		.58			.45
When my partner briefly remains silent after I said something, I have the feeling that he/she disagrees.		.76			.57
When my partner and I start talking at the same time it is often because we are not of the same opinion.		.53			.38

Table 8.1 continued.

	F1	F2	F3	F4	h^2
<i>Factor 3 [Shared Cognition]</i>					
My partner and I are on the same wavelength.			.79		.73
My partner and I understand each other.			.81		.74
My partner and I have the feeling that we agree with each other.			.96		.84
<i>Factor 4 [Disrupted Flow-Positive]</i>					
When my partner is quiet after I said something, I feel that my opinions are confirmed.				.70	.48
I experience my partner's silence as agreement.				.75	.55
When my partner briefly remains silent after I said something, I feel reaffirmed.				.70	.55
Eigenvalue	2.47	2.44	2.32	1.64	
Percentage of variance	.17	.16	.16	.11	
Percentage of variance (Cum.)	.17	.33	.48	.59	
<i>Factor correlations:</i>					
Factor 1	---	-.24	.61	.16	
Factor 2	---	---	-.37	.20	
Factor 3	---	---	---	.13	

Note. Coefficients smaller than .20 are not displayed. h^2 = communality coefficient.

Hypothesis testing. We tested the hypothesis that perceived relationship stability would predict the disrupted flow experience with two regression analyses, regressing DFE-Positive and DFE-negative separately onto perceived relationship stability (PRS). The first regression showed that perceived relationship stability significantly predicted DFE-Negative, $b = -.23$, $se = .09$, $t(241) = -2.45$, $p = .01$. The second regression revealed no effect of perceived relationship stability on DFE-Positive, $t < 1$, *ns*.

We used the guidelines by Hayes (2013) to test whether the effect of perceived relationship stability on DFE-negative was mediated by a sense of shared identity. The model showed that perceived relationship stability predicted a sense of shared identity, $b = .55$, $se = .06$, $t(250) = 9.49$, $p < .001$. Shared identity only marginally predicted DFE-Negative, $b = -.16$, $se = .08$, $t(250) = -1.91$, $p = .057$. The indirect effect of perceived relationship stability on DFE-Negative only reached marginal significance, $b = -.09$, $se = .05$, 95% bootstrapped CI [-.20; .02], Sobel $Z = -1.86$, $p = .06$, $Kappa^2 = .06$, $SE = .04$.

A similar analysis was performed to examine whether there was an indirect effect of perceived relationship stability through shared identity on DFE-Positive. Perceived relationship stability predicted a sense of shared identity, $b = .55$, $se = .06$, $t(250) = 9.49$, $p < .001$. Shared identity predicted DFE-Positive, $b = .19$, $se = .08$, $t(250) = 2.44$, $p = .016$. Although there was no evidence for a direct effect of perceived relationship stability on DFE-Positive, the indirect effect was significant, $b = .11$, $se = .05$, 95% bootstrapped CI [.01; .16], Sobel $Z = 2.35$, $p = .019$, $Kappa^2 = .08$, $SE = .04$.²⁵

Discussion

Study 1 identified two factors in the perception of conversational flow disruptions: A negative factor, in which flow disruptions are

²⁵ We also tested for reverse mediation, by switching the mediator and the dependent variable. However, both indirect effects of perceived relationship stability on shared identity via DFE-Positive ($b = .008$, $SE = .01$, *ns*) and via DFE-Negative ($b = .03$, $SE = .02$, *ns*) were much smaller than the hypothesized indirect effects and did not reach statistical significance.

experienced as a sign of disagreement or misunderstanding; and a positive factor, in which flow disruptions are perceived as a validation of what has been said. The factor analysis suggested that these factors can be distinguished from a general sense of shared cognition and from perceived relationship stability as provided by the perceived relationship satisfaction of the partner, strengthening the discriminant validity of the scale.

In line with the hypotheses, disruptions of flow were perceived more negatively to the extent that the relationship was perceived to be instable. Although perceived relationship stability did not directly predict the positive perceptions of flow disruptions, an indirect relation through shared identity was found. That is, the data suggested that perceived relationship stability predicted an increased sense of shared identity between partners, which was associated with an increased likelihood that flow disruptions were perceived as positive. This means that a shared identity can potentially act as a resource which partners can rely on for information about the consensus among them when conversational flow is disrupted.

Study 1 identifies a relation between perceived relationship stability and the interpretation of disruptions of conversational flow. However, due to the correlational nature of the design, no causal relations can be tested. In addition, it is possible that participants' recollected interpretations of flow-disruptions as obtained by the self-report measures differ from their actual experiences of when flow is disrupted in a conversation with their partner. Study 2 aimed to overcome these shortcomings by *manipulating* flow disruptions in a conversation between romantic partners.

Study 2

Methods

Participants. Participants were 74 romantic partners (37 couples, 36 mixed-sex, 1 same-sex) with an age range of 19-35 ($M = 22.31$, $SD = 3.08$). The mean relationship duration was 34.40 months ($SD = 23.51$

months). 7 couples were married, 7 couples were cohabiting, and 23 couples were neither cohabiting nor married.

Procedure. Romantic partners were placed into separate cubicles where they filled out the informed consent form and the first questionnaire. To manipulate conversational flow, we randomly assigned dyads to either a flow or a disrupted-flow condition. In the flow condition, dyads had a 5-min conversation about arranged marriages via headsets. This topic was chosen to be relevant to relationships. The disrupted-flow condition was similar, except that auditory feedback was delayed by 1s throughout the second half of the conversation. Previous research indicated that a 1s delay was long enough to hamper the coordination of communicative behaviors and reduce the flow of the conversation without making participants consciously aware of the delay (Koudenburg et al., 2013a, , *Chapter 4*; Pearson et al., 2008). After the conversation, we measured participants' level of social validation and shared cognition in a questionnaire.

Measures. Before starting the conversation, we measured participants' perceived relationship stability ($\alpha = .68$) as in Study 1. To test whether effects on social validation could be explained by individual differences, participants completed the Dutch 24-item attachment style questionnaire, which includes a subscale for each of the four attachment styles (i.e. secure, fearful, preoccupied, & dismissive; Van Oudenhoven, Hofstra & Bakker, 2003).

After the conversation participants indicated their feelings of social validation, by rating their agreement with three items: "I had the feeling that my ideas are grounded", "I felt validated in my opinions", "I had the feeling that my partner shared my opinions" ($\alpha = .80$; Koudenburg et al., 2011a, *Chapter 3*). Shared cognition was measured as in Study 1 ($\alpha = .82$).²⁶

²⁶ These measures are part of a larger questionnaire including measures of emotions, belonging, self-esteem (Van Beest & Williams, 2006), respect, rapport, the love triangle of self and partner (Sternberg, 1988), attitudes on arranged marriages and relationship satisfaction of self and partner before and after the conversation. Only the variables of interest to the current research question are reported here but further information can be obtained from the first author.

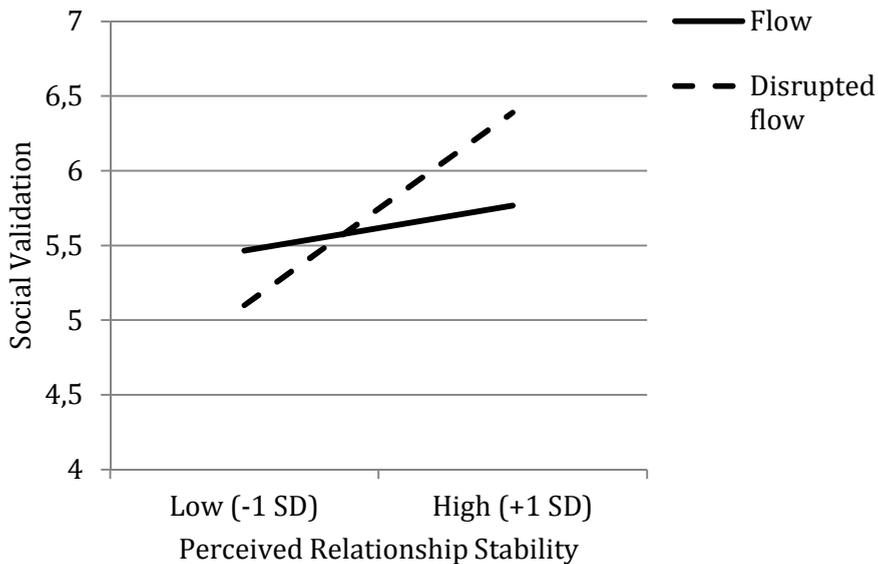
Results

One participant was removed from the analysis because of missing data. The intraclass-correlations (ICC1) for social validation (.42) and shared cognition (.61) indicated that multilevel modeling was required. To correct for the interdependence of the data within couples, we tested our predictions with hierarchical linear modeling analyses. We examined whether social validation was predicted by flow at the group level, perceived relationship stability (PRS) at the individual level, and the flow by perceived relationship stability cross-level interaction. All continuous variables were standardized prior to analysis. Perceived relationship stability-scores were on average high, with a mean of 6.39 and a standard deviation of .51. No effects of gender, age, or duration of the relationship on shared cognition or validation were found, and therefore these variables were not included in the final model.

HLM analysis revealed a main effect of perceived relationship stability, indicating higher social validation with increasing perceived relationship stability ($\gamma = .62$, $SE = .15$, $t(69) = 4.14$, $p < .001$). As predicted, no main effect of flow was found ($t < 1$), but the interaction of flow and perceived relationship stability was found, $\gamma = -.49$, $SE = .19$, $t(69) = -2.49$, $p = .015$, See Figure 8.1). Simple slope analysis revealed a significant positive effect of perceived relationship stability in the no flow condition ($\gamma = .62$, $SE = .15$, $t(69) = 4.14$, $p < .001$), but no effect in the flow condition ($t < 1$, *ns*). Further analyses revealed that partners high in perceived relationship stability (+1 SD) felt more socially validated when conversational flow was disrupted, rather than when the conversation had flow, $\gamma = .65$, $SE = .30$, $t(69) = 2.18$, $p = .036$. No difference was found for participants with low perceived relationship stability (-1 SD), $\gamma = -.34$, $SE = .30$, $t(69) = -1.14$, $p = .26$.

We performed a similar HLM analysis on shared cognition. A main effect of perceived relationship stability indicated higher levels of shared cognition with increasing perceived relationship stability ($\gamma = .49$, $SE = .12$, $t(69) = 3.95$, $p < .001$). We found no main effect of flow ($t < 1$). Furthermore, the PRS by flow interaction effect on shared cognition was not significant, $\gamma = -.19$, $SE = .16$, $t(69) = -1.23$, $p = .224$, although the means revealed a pattern similar to the findings on social validation.

Figure 8.1 Relation between perceived relationship stability and social validation for the different conditions of flow in Study 2.



Finally, we tested the alternative explanation that instead of perceived relationship stability, individual attachment styles could be responsible for the effects. In four additional HLM analyses social validation was regressed on each of the attachment styles, the flow manipulation and the attachment style by flow interaction. Results showed no significant main effects of any of the attachment styles on social validation (all $t_s < 1.58$, all $p_s > .1$), nor any effects of the attachment styles by flow interactions (all $t_s < 1.13$, $p_s > .1$). Similarly, for shared cognition, no main effects of any of the attachment styles (all $t_s < 1.20$, $p_s > .1$), nor any interaction effects were found (all $t_s < 1$, ns). The data thus provided no support for this alternative explanation.

Discussion

Study 2 showed that when a conversation has flow, perceived relationship stability had no influence on ones level of social validation. However, when conversational flow is lacking, people who perceive their relationship to be stable feel more validated than those who

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believe their partner is dissatisfied. Moreover, participants with high perceived relationship stability feel more validated when conversational flow is disrupted than when the conversation is smoothly flowing. These results thus paradoxically indicate that among those who believe to be in a stable relationship, a defect in communication can lead partners to rely on their established shared reality, and therefore foster a sense of validation.

Study 3

In Study 3 we aimed to test the generalizability of the findings. First, in addition to romantic couples, Study 3 also included partners in other relationships (i.e. friendships, family-ties). Related to this point, this study examined a different moderator, namely relationship strength. Whereas relationship stability was an important predictor in romantic relationships, we expected it to be less relevant for people in, for instance, family relationships. Relationship strength, in contrast, would be applicable to a wide range of relationships. In addition, it allowed us to examine whether the effect was specific to perceptions of stability, or whether other factors generating a sense of security (such as relationship strength) would produce similar effects. Furthermore, in order to examine whether the effects would hold beyond telephone conversations, we used video-mediated communication between partners. Finally, rather than asking couples to come to the laboratory, in Study 3 we set up a field experiment, in which we approached and tested participants in a naturalistic environment (i.e. a shopping center).

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Methods

Participants. Dyads of participants were recruited in a shopping center in the Netherlands. The sample consisted of 130 participants ($M_{age} = 35.95$, $SD = 17.68$, 39% male, 61% female). Members of each dyad were previously acquainted to each other. On average, partners had been acquainted for 17 years ($SD = 14.65$ years). In return for their

participation, participants were either given a coupon of 6 euros to spend in the shop, or a cup of coffee and cake.

Procedure and materials. After agreeing to participate, members of the dyad were placed behind two tables where they filled out their consent forms. To measure *relationship strength*, participants answered three questions on 7-point likert scales, ranging from 1 = *not at all*, to 7 = *completely*: “How well do you know the participant with whom you will be talking?”, “Do you and the other participant interact frequently?”, “Is the participant whom you will be talking to important in your life?” ($\alpha = .88$).

The conversations took place in a quiet place in the shopping center. Here, two laptops were connected via a network cable, and located in such a way that during the conversation, participants could only see or hear each other through their headsets and their laptop screen. We developed a program for the interaction that allowed dyads to interact via both visual and auditory channels, and allowed us to introduce a delay in audiovisual feedback at some point in the conversation. Participants were instructed to talk about their holidays for 5 minutes. Previous research had shown this topic allowed participants to have a smoothly flowing conversation (Koudenburg et al., 2013a, *Chapter 4*). After 2.5 minutes of conversation, we introduced the flow-manipulation by delaying audiovisual feedback. There were five conditions: No delay vs. 0.5s delay vs. 1s delay vs. 1.5s delay vs. 2s delay. These different durations of the delay were intended to measure whether the effects would increase with longer delays. However, because the effects on social validation were similar across the different durations of the delay, we combined the results for the different delay conditions (coded -1) and compared these to the flow condition (coded 1). After the conversation, we measured social validation ($\alpha = .82$) and shared cognition as in Study 2 ($\alpha = .85$).²⁷

²⁷ Besides the reported measures, the questionnaire before the conversation included measures for motivation and attitudes on different holiday destinations. The questionnaire after the conversation also assessed participants' emotions, feelings of belonging, respect, entitativity, meaningful existence and their satisfaction with the technology used for the conversation.

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As in Study 2, we expected that relationship strength would not influence the extent to which dyads would experience a sense of shared cognition and social validation in the flow condition. However, when auditory feedback was delayed, we expected the experience of social validation and shared cognition to be predicted by relationship strength.

Results

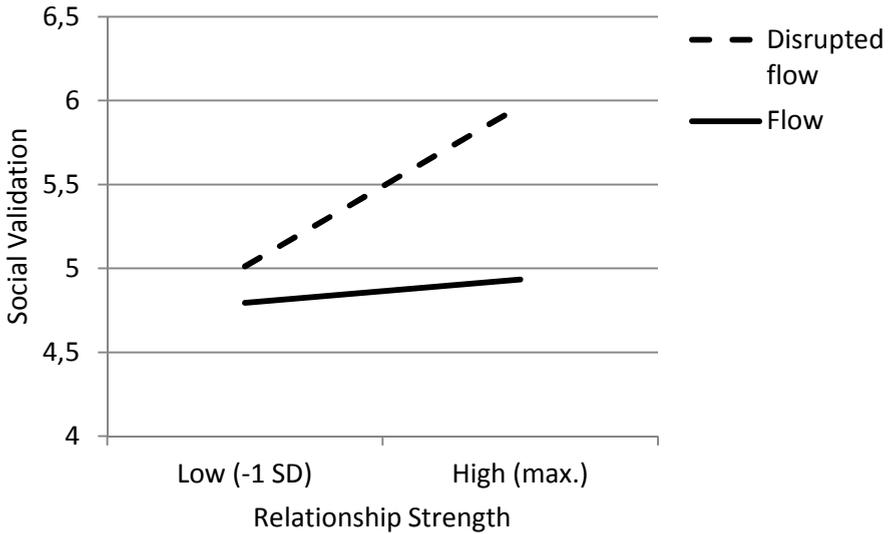
The ICC1 for social validation (.42) and shared cognition (.54) indicated that multilevel modeling was required. The scores on relationship strength were standardized prior to analysis (Mean = 6.31, SD = 1.20, with no differences between the conditions of flow, $t < 1.33$, *ns*). We examined whether social validation was predicted by the group level flow (vs. disrupted flow), relationship strength measured at the individual level, and the flow by relationship strength cross-level interaction.

HLM analysis revealed a main effect of relationship strength, indicating higher levels of social validation with increasing relationship strength, $\gamma = .32$, SE = .11, $t(126) = 2.87$, $p = .005$. A flow main effect revealed higher levels of social validation in the disrupted flow condition than in the flow condition, $\gamma = -.35$, SE = .13, $t(63) = -2.61$, $p = .012$. This main effect was qualified by the predicted flow by relationship strength interaction, $\gamma = -.24$, SE = .11, $t(126) = -2.15$, $p = .034$ (See Figure 8.2A). Simple slope analysis revealed that in the disrupted flow condition relationship strength significantly predicted feelings of social validation, $\gamma = .56$, SE = .13, $t(63) = 4.50$, $p < .001$.

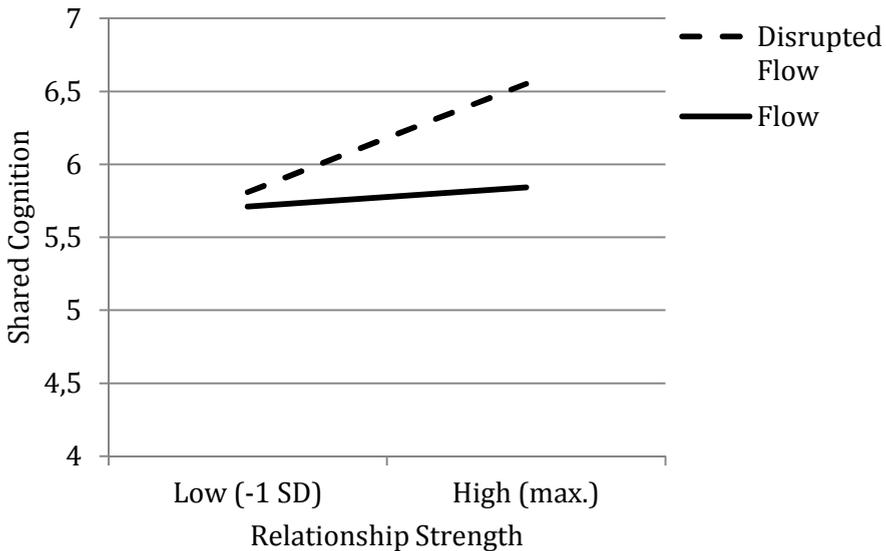
No such effect was found in the flow condition, $\gamma = .08$, $t < 1$, *ns*. Moreover, partners with high levels of relationship strength (i.e. maximum score, .69 SD above mean) felt more socially validated when conversational flow was disrupted, rather than when conversation was flowing, $\gamma = .52$, SE = .16, $t(126) = 3.33$, $p = .002$. No difference was found for partners with low levels of relationship strength (-1 SD), $t < 1$, *ns*.

Figure 8.2. Relation between relationship strength and social validation (A) and shared cognition (B) for the different conditions of flow in Study 3. Lines are plotted between 1 standard deviation below the mean relationship strength score and the maximum end of the scale.

A.



B.



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A similar analysis on shared cognition revealed a positive main effect of relationship strength, $\gamma = .26$, $SE = .09$, $t(126) = 2.86$, $p = .005$. A marginal main effect of flow ($\gamma = -.23$, $SE = .12$, $t(63) = -1.95$, $p = .055$) suggested that shared cognition was somewhat higher in the no flow condition than in the flow condition. The predicted flow by relationship strength interaction was found, $\gamma = -.18$, $SE = .09$, $t(126) = -2.00$, $p = .047$ (See Figure 8.2B). Simple slope analysis showed a significant positive effect of relationship strength on shared cognition in the no flow condition ($\gamma = .44$, $SE = .11$, $t(63) = 4.18$, $p < .001$), but not in the flow condition ($\gamma = .08$, $t < 1$, ns). Further analyses revealed that partners with a high relationship strength (+ .69 SD) experienced higher levels of shared cognition in the disrupted flow condition than in the flow condition, $\gamma = .41$, $SE = .15$, $t(129) = 2.78$, $p = .007$. No difference was found for partners with low relationship strength (-1 SD), $t < 1$, ns .

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General Discussion

Previous research has repeatedly found negative effects for disruptions of conversational flow in conversations between people who were a priori unacquainted to each other (Koudenburg et al., 2011a; 2013a; 2013b; 2013c, *Chapter 3, 4, 6, 7*). However, the present research suggests that people in close relationships experience disruptions of conversational flow (e.g. brief silences, interruptions) not always in a similar negative way. More specifically, in a survey, a laboratory experiment, and a field experiment we found that when conversational flow between partners is disrupted, the perceived stability and strength of the relationship influences the extent to which such disruptions are interpreted as negative (e.g. misunderstanding, disagreement, Study 1) or as socially validating (Study 1, 2, 3). When the relationship is perceived to be stable or strong, a disruption of conversational flow results in *higher* levels of social validation than a smoothly flowing conversation does. When a conversation has flow, no influence of perceived relationship stability or strength is found. Study 2 and 3 showed a similar pattern of findings for feelings of shared cognition.

Results thus reveal a paradoxical effect showing that disruptions of flow can be experienced as validating to the extent that relationship is strong and stable. Although this finding may be counterintuitive, a potential explanation may be given by the literature on shared reality (Hardin & Higgins, 1996; Hardin & Conley, 2001). In a situation of conversational flow, the partners' viewpoints are easily accessible. On the one hand this enables partners to identify commonalities in their ideas, but on the other hand potential differences in opinion are also less likely to remain concealed. When conversational flow is disrupted however, the partners' viewpoints are less easy to access. As a result, partners rely on their prior beliefs about the relationship. In highly secure relationships, partners are likely to feel they know one another very well and to have developed a strong sense of shared reality. When communication fails, partners have more scope for interpreting their partner's view in terms of this shared reality and are likely to feel reaffirmed as a result.

These findings share some conceptual similarities with the Social Identity Model of Deindividuating Effects (SIDE). Research on the SIDE model has shown that when social identities are salient, group members express strong commitment to group norms *especially* when they are anonymous and when visual communication between participants is absent (e.g., Reicher, Spears, & Postmes, 1995, Postmes, Spears, & Lea, 1998; Postmes & Spears, 1998). The reason for this is that anonymity means that individual group members are not distracted by individuating information about others in the group: The ingroup self-stereotypes are not challenged by any concrete new information about individuals. Thus, an *absence* of communicative cues keeps ideas that already exist about "us" intact. Conversely, a presence of communicative cues means that new information needs to be verified as consistent with pre-existing ideas of "us".

In the present research, our reasoning is similar in some sense: In personal relationships, too, an absence of interpersonal communication may keep pre-existing ideas about "us" intact. Here too, the gaps left by deficiencies in communication are filled by prior beliefs that people have about the level of understanding and consensus within their relationship. However, our findings extend the research on the SIDE-

model by focusing on inductively formed groups, rather than abstract social categories (cf. Postmes, Spears, Lee, & Novak, 2005; Postmes, Haslam, & Swaab, 2005). Specifically, the present research shows that the process of induction, in which the interpersonal relation between partners gives rise to the sense of social unity, can ultimately generate a social unity that influences members of the dyad above and beyond the inter-individual level. The shared reality that emerged at the dyad level provided a strong basis for feelings of validation in conversations in which flow was disruptive. It appears that the dyad (or group) – and the shared reality that exists within that dyad – informs people about the validity of their ideas, when actual information about the personal standpoints of others is more difficult to access. In fact, the distorted conversation provides individuals with a scope for interpreting the ideas of the other, which, as research suggests, often leads to estimates that are more similar to one's own ideas than actual ideas of others (Koudenburg, Postmes, & Gordijn, 2011b, *Chapter 9*; Sillars, 1985). In a way, flow disruptions leave more room for interpretation, and if the context in which this disruption occurs is one of shared reality and common understanding, this will provide a sense of validation.

An alternative explanation for the effects could be that partners are initially threatened by a flow disruption, but engage in compensatory thoughts through which they may end up reporting higher levels of validation than they would have had when the conversation was smoothly flowing. Such a mechanism would be difficult to uncover, because at the point of measurement the threat may have already been reduced by these compensatory thoughts. In our data, we did not find higher levels of anxiety and distress in the disrupted flow condition than in the flow condition.²⁸ On a theoretical basis, we would expect

²⁸ Directly after the conversation in Study 2, participants indicated on two single items to what extent they felt distressed and anxious (1 = not at all, 7 = completely). Multilevel analysis revealed that levels of distress were somewhat higher in the flow condition ($\gamma = .77$, $SE = .34$, $t(36) = 2.27$, $p = .029$), but revealed no effect of condition on anxiety ($\gamma = .05$, $SE = .19$, $t < 1$, *ns*). No effects of PPS or the PPS by flow interaction were found (all t s < 1 , *ns*).

In Study 3, anxiety was measured similarly to Study 2. Distress was measured with three items (i.e. distress, at ease (R), comfortable (R), $\alpha = .71$). The disruption of flow did not affect levels of distress ($\gamma = .14$, $SE = .12$, $t(63) = 1.17$, *ns*) or anxiety ($\gamma = .10$, $SE = .09$, $t(63) = 1.05$, *ns*). Relationship strength marginally reduced levels of anxiety ($\gamma = -.16$, $SE = .09$, $t(126) = 1.84$, $p = .068$), but did not influence distress ($t < 1$, *ns*).

compensatory thoughts to be especially prevalent by those who perceive their relationship to be weak and unstable. However, the data revealed higher levels of validation by partners who perceive their relationship as strong and stable. Therefore, we believe that our initial explanation fits the data better than this alternative explanation.

Whereas previous research indicated that among people who have no a priori acquaintance, flow disruptions are often experienced as socially invalidating, we found no such effect for participants who scored lower than average on the measures of perceived relationship stability and strength. This can be due to the fact that participants in our sample scored on average very highly on these measures. A participant who is located one standard deviation below the mean still scored well above the midpoint of the scale, and is therefore unlikely to respond in the way that a complete stranger would.

In the present studies we have focused on brief conversations between partners and we should therefore be careful in generalizing these findings to long-term effects of disrupted conversational flow. When communication channels between close partners are for a longer period of time disrupted (e.g. when an expat frequently calls a partner in their home country on a poor line), it is plausible that the positive effects disappear. However, it could also be that the shared reality provides a framework that becomes in a way resistant to actual opinion changes on the other side of the line. The result may be that partners idealize their relationship, and hold on to a shared reality that conceals actual discrepancies in viewpoints (see also the literature on positive illusions, e.g. Murray, Holmes, & Griffin, 1996). On the one hand, one would expect differences between actual and perceived agreement between partners to be problematic in the long run. However, research shows that perceived agreement is often a stronger predictor of positive relationship outcomes than actual agreement (Pollmann & Finkenauer, 2009; Acitelli et al., 1993; Montoya, Horton, & Kirchner, 2008; Swann & Gill, 1997). Indeed, it may be that the ability to overcome or even positively interpret brief deficiencies in communication contributes to

Additionally, no flow by relationship strength interaction effect was found on anxiety ($\gamma = .14$, $SE = .09$, $t(126) = 1.58$, *ns*), nor on distress ($t < 1$, *ns*).

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the stability of close relationships. These long-term effects provide an interesting route for further empirical investigation.

In conclusion, the results of these studies suggest that very subtle and presumably unconscious aspects of communication can influence social processes such as the maintenance of a shared reality. A minor disruption of conversational flow, such as a brief silence or a 1s delay in the line can either obstruct or foster relationship formation, depending on the context of the conversation. Previous research showed that in the (insecure) situation of meeting strangers, flow disruptions elicit questions about the consensus and decrease feelings of validation (Koudenburg et al., 2011a; 2013a, *Chapter 3, 4*). The present studies however show that when flow is disrupted in the secure context of a relationship, partners are likely to use their knowledge about the shared reality to infer their partner's agreement. In this way, a disruption of conversational flow can paradoxically foster feelings of social validation.

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Chapter nine

If They Were to Vote,
They Would Vote for Us

Koudenburg, N., Postmes, T., & Gordijn, E. H. (2011b). If They Were to Vote, They Would Vote for Us. *Psychological Science*, *22*(12), 1506-1510. doi: 10.1177/0956797611520164.

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Abstract

In two field studies, we examined whether voters overestimate support for their political party among nonvoters. In Study 1, voters estimated the percentage of votes their party would receive in an upcoming election, and this percentage increased when voters estimated the percentage of votes their party would receive if nonvoters also were to vote. In Study 2, participants overestimated support for their party even when we made them explicitly aware of current levels of this support by presenting them with poll-based forecasts of election results. Furthermore, Study 2 demonstrated that commitment to vote for a specific party predicted the degree of overestimation. Our results imply that highly committed voters are particularly likely to project support for their party onto nonvoters. Implications for the literature on social projection and social identity are discussed.

If They Were to Vote, They Would Vote for Us

At election time, parties as well as voters aim to maximize their number of political allies. When voter turnout is low, however, the actual number of a party's supporters in the entire population is ambiguous. This ambiguity allows voters to believe that an unrealistically large proportion of nonvoters are tacit supporters of their party. This phenomenon is central to the research reported here.

It has been noted that politicians often purport to speak for an entire nation (Reicher & Hopkins, 1996), perhaps to make it seem as though their viewpoints have the backing of a majority. However, this behavior may also reflect a broad tendency among people to overestimate levels of public support for their own political viewpoints. In the United States, many supporters of both the Democratic and the Republican parties were convinced that their respective party had won the 2000 presidential election. The fact that a large proportion of potential voters did not vote in the election may have exacerbated this difference of opinion.

Psychological research suggests that a simple phenomenon may explain this overestimation of party support: People are prone to engage in *social projection*, the tendency to expect other people's preferences to be similar to one's own (see Krueger, 1998, for a review). The belief that other people are similar to oneself may promote a sense of social support and validation (Marks & Miller, 1987; Ross, Greene, & House, 1977; Sherman, Presson, & Chassin, 1984). Research shows that such projection is particularly strong when people make assessments of members of their in-group (Robbins & Krueger, 2005). However, projection is much less strong—and can even reverse—when people make assessments of out-group members (Mullen, Dovidio, Johnson, & Cooper, 1992; Robbins & Krueger, 2005; Spears & Manstead, 1990).

In the case of political opinions, this imbalance makes a lot of sense. Media coverage and public debate ensure that opposing political views are highly salient. This salience limits the freedom with which

supporters of a political party can project their own political preferences onto the supporters of another party. However, in an election with a low turnout of voters, the political views of a large proportion of the population are unknown. Nonvoters constitute an interesting cohort: From a voter's perspective, they are neither in-group members nor out-group members. They are therefore an ideal target for social projection. Nonvoters may thus unwittingly contribute to voters' exaggerated perceptions of support for their political parties.

Prior research on social categorization and projection has always clearly demarcated group membership (see Robbins & Krueger, 2005, for a review). Indeed, we are unaware of any research that has tested the hypothesis that people whose group membership is unknown can serve as targets of social projection. This hypothesis complements the idea that the primary targets of social projection are in-group members. We propose that by projecting their political preferences onto nonvoters, whose political affiliation is by definition unknown, voters cognitively extend the boundaries of their in-group as far as the constraints of reality will allow. In so doing, they include in their own group individuals whose group membership is unknown. In the research reported here, we tested the hypothesis that voters perceive nonvoters as being tacit supporters of their own political party.

Additionally, we predicted that people's commitment to vote for a political party would influence their tendency to overestimate the support for that party by expecting nonvoters to support it. There are two reasons why highly committed voters could be particularly prone to projection. First, higher commitment entails a stronger need to validate one's opinions (Marks & Miller, 1985), and projection provides such validation. Second, highly committed voters should be motivated to promote their party's success and, therefore, to project support for their party onto nonvoters.

In two field studies, we tested these hypotheses. In Study 1, we examined the extent to which voters included nonvoters among the members of their party's political base. In Study 2, we examined whether this over-inclusiveness was amplified by voters' commitment to vote for their party.

Study 1

Methods

Participants. Participants were recruited at polling stations in The Netherlands during the city-council elections in March 2010 ($N = 158$; 57% male, 43% female; age range = 18–72 years, mean age = 33.25 years, $SD = 13.61$). One hundred sixteen participants indicated which party they planned to vote for in the upcoming parliamentary election (in June 2010), and 94 of these participants estimated the percentage of votes their party would obtain in the election. Analyses were based on these 94 participants.

Procedure and materials. After they had cast their votes, participants were asked to complete a short questionnaire. First, they indicated which party they planned to vote for in the parliamentary election. They then estimated the percentage of votes they expected their party to receive (estimated support among the voting public) and the percentage of votes they expected their party would receive if all nonvoters also were to vote in the election (estimated support if everyone voted).

Results and discussion

In line with our hypotheses, a paired t test revealed that voters expected that their party's percentage of votes would increase if nonvoters were to vote in the election (estimated support among the voting public: $M = 18.46\%$, $SD = 10.42$; estimated support if everyone voted: $M = 21.63\%$, $SD = 13.43$), $t(93) = 5.37$, $p < .001$, $d = 1.11$. The fact that voters expected a disproportionate share of nonvoters to support their party shows that the targets of voters' social projection were not restricted to verifiable in-group members. More specifically, voters' estimates of the percentage of votes their party would receive increased by 3.17% when they included hypothetical votes cast by nonvoters in their estimations.

Projection is a plausible and parsimonious explanation for this increase: Because nonvoters' opinions are unknown, voters can freely

project political preferences onto them. Our results could be explained not only by cognitive processes but also by motivational processes: Voters may project their views onto nonvoters because they desire (and perhaps expect) the success of their in-group. Prior research has indeed suggested that people who are highly identified with the political party they support tend to strategically maintain permeable group boundaries for their party because such inclusiveness increases the level of support they perceive their party to have (Morton, Postmes, & Jetten, 2007).

If there were a motivational basis to the effect observed in Study 1, we would expect that highly committed voters would show larger biases than do voters with low commitment. In Study 2, we therefore tested whether voters' level of commitment to vote for a particular political party predicted the degree of their overestimation of nonvoters' support for that party. Moreover, we presented participants in Study 2 with poll-based forecasts of election results to examine whether voters would overestimate public support for their party even when they were made explicitly aware of how much their estimation deviated from the level of support indicated by polls.

Study 2

Methods

Participants. A few weeks before the national election, 414 participants filled out a questionnaire on the streets of three cities in The Netherlands. We analyzed data only from participants who indicated that they would vote for one of the seven largest political parties and who provided both an estimate of the distribution of parliamentary seats that would be won by these parties and an estimate of the seats that would be won by these parties if nonvoters were also to vote. Two hundred seven participants (57% male, 43% female; age range = 18–76 years, mean age = 40.27 years, $SD = 16.49$) met these criteria and were included in our analyses.

Procedure and materials. Participants were asked whether they planned to vote in the upcoming parliamentary election and, if so, for

which party. Commitment to vote for a party was measured with two items: "Voting for this party is important to me" and "I am certain that this is the party I want to vote for." Participants indicated their agreement with these statements using 5-point scales (1 = *disagree*, 5 = *agree*) and scores for the two items were averaged to create a single score.²⁹ They were then presented with a poll-based forecast of the distribution of seats that would be won in the upcoming parliamentary election³⁰ and were asked to estimate the number of seats that would be won by each of the seven largest political parties in that election. After making this estimation, participants were informed that not all citizens would vote and that the distribution of seats might be different if all citizens, including nonvoters, were to vote in the election. Participants were then instructed to estimate how the seats in parliament would be distributed among the seven largest parties if all citizens were to vote.

Calculating overestimations. To calculate participants' overestimation of support for their party among the voting public, we subtracted the number of seats the forecast had indicated the party would win from the number of seats participants predicted the party would win. We similarly subtracted the number of seats the forecast had indicated each participant's party would win from the number of seats the participant predicted that party would win if everyone voted. The difference between the two estimates indicated the extent to which participants included nonvoters as supporters of their party. We controlled for the degree to which voters predicted that nonvoters would support other parties, given that it was theoretically possible that voters would overestimate the number of seats that would be won not only by their own party but also by other parties. The pattern of results did not change when we analyzed the data without controlling for this possibility.

²⁹ Pilot testing ($N = 44$) showed that this measure correlated positively with Allen and Meyer's (1990) commitment scale, $r = .48$. Additionally, the measure correlated positively with the Identification Scale by Leach et al. (2008), $r = .52$.

³⁰ The forecast was based on the mean results of the two largest parliamentary election polls, conducted by Synovate and Maurice de Hond (April 19, 2010), respectively.

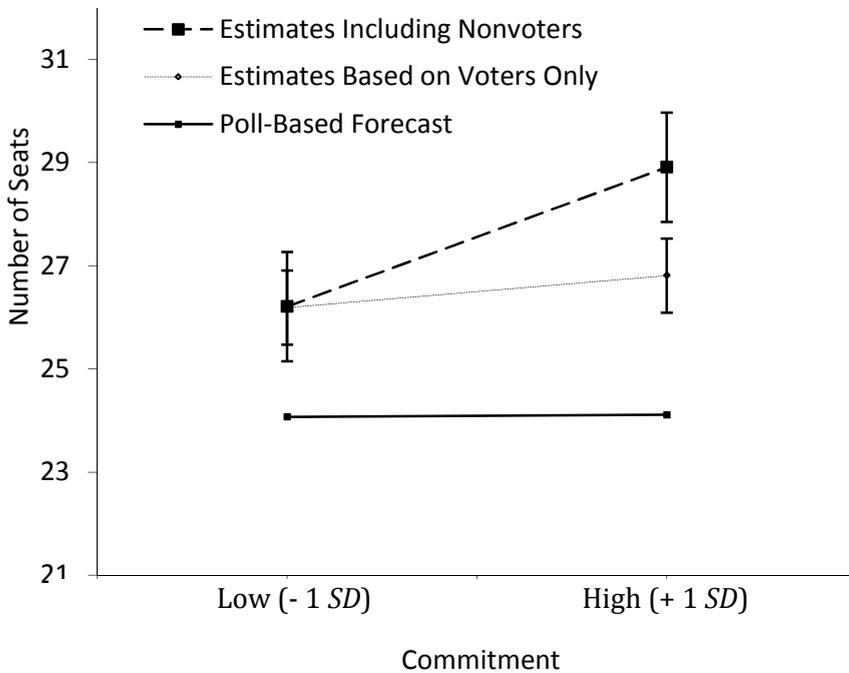
Results and discussion

Overestimation. As expected, t tests showed that both support among the voting public ($M = 3.25$, $SD = 5.73$), $t(206) = 8.15$, $p < .001$, $d = 1.14$, and support if everyone voted ($M = 4.16$, $SD = 8.56$), $t(206) = 6.99$, $p < .001$, $d = .97$, were significantly overestimated (values are larger than 0); this finding indicates that participants expected their party to obtain more seats than current polls indicated it would, whether or not they included nonvoters in their estimates. On average, voters overestimated the number of seats their party would win if nonvoters were to vote by 4.16 seats, or 18%.

Commitment. Scores on commitment were standardized prior to analysis. We used a repeated measures analysis of variance with commitment entered as an additional factor to examine whether it predicted the extent to which voters overestimated the support for their party among nonvoters. We found a main effect of estimation type (support among the voting public vs. support if everyone voted), $F(1, 203) = 4.00$, $p = .05$, $\eta^2 = .02$; overall, the degree of voters' overestimation increased when they included nonvoters in their estimations of party support. More important, however, the predicted interaction between commitment and estimation type was significant, $F(1, 203) = 5.27$, $p = .02$, $\eta^2 = .03$. Commitment positively predicted the expected support of nonvoters (see Figure 9.1).³¹ Participants with a low level of commitment to their party (1 SD below the mean) overestimated the number of seats their party would win in the upcoming elections by an average of 2.12 seats ($SE = 0.72$) in their estimates of support among the voting public (i.e., predictions based only on the behavior of actual voters) and by about the same number of seats when they included nonvoters in their estimations ($M = 2.14$ seats, $SE = 0.72$). However, voters who were highly committed to vote for their party (1 SD above the mean) overestimated the number of seats their party would win in the upcoming elections by an average of 2.70 seats ($SE = 1.06$) in their estimates of support among the voting public, but by an average of 4.80 seats ($SE = 1.06$) when they included nonvoters in their estimates.

³¹ We obtained similar significant results when we removed outliers whose overestimation scores deviated more than 2.5 standard deviation from the mean ($n = 7$).

Figure 9.1. Mean number of parliamentary seats that each of the seven largest political parties were expected to win in the upcoming election according to polls, mean number of parliamentary seats that participants estimated their party would win, and mean number of parliamentary seats that participants expected their party would win if nonvoters also were to vote in the election. Participants' mean estimates are shown for participants with a low level of commitment to vote for their party (1 *SD* below the mean) and for participants with a high level of commitment to vote for their party (1 *SD* above the mean). Error bars represent standard errors.



In summary, our results show that voters overestimate the level of public support for their party, even in the face of poll-based election forecasts that contradict such overestimations. Voters expect their party to receive a disproportionate amount of votes in upcoming elections, and these disproportionate expectations become more pronounced when voters estimate their party's level of support among both voters and nonvoters. In addition, more strongly committed voters are more

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likely to overestimate support for their party by considering nonvoters to be tacit in-group supporters.³²

General Discussion

In two field studies, we found that voters tend to overestimate support for their party by assuming that nonvoters would support that party if they were to vote. Moreover, Study 2 showed that this tendency is especially strong among people who are highly committed to vote for their party.

In line with the literature on social projection, voters in our studies overestimated the level of public support for their own party in elections. This overestimation occurs even when voters are presented with election forecasts indicating actual levels of support. Our results also show that overestimation is more pronounced when voters can project their views onto targets whose views are unknown. Specifically, people's overestimation of public support for their party increases when they estimate how many votes their party would receive from both voters and nonvoters, rather than from voters alone.

These findings suggest that psychological processes may explain why political leaders are so reluctant to resign themselves to representing a minority viewpoint: They are likely to consistently overestimate the number of their supporters. Thus, when politicians and staunch supporters claim that their parties have broad-based support, they may do so for more than rhetorical reasons (Reicher & Hopkins, 1996): They may genuinely believe that their support base is broader than it actually is. Our research demonstrates that ordinary voters exaggerate public support for their party, too.

Our findings have significant implications for the field of psychology. They suggest that targets of social projection include not only verifiable

³² An alternative explanation for this finding is that our measures of perceived support tapped into people's belief that participation is a function of party affiliation. According to this account, parties that are perceived to have active supporters should be allocated relatively little support among nonvoters. Analyses did not support this alternative explanation ($F_s < 1$).

in-group members but also people whose group membership is unknown. This finding is somewhat unusual from the perspective of research on social identity (Tajfel & Turner, 1979; Turner, 1985). Indeed, research suggests that people are prone to in-group overexclusion because they are afraid to misidentify out-group members as in-group members (Leyens & Yzerbyt, 1992). Moreover, research has shown that highly identified group members are the most keen to keep group boundaries closed so that their group will include only genuine supporters (Castano, Paladino, Coull, & Yzerbyt, 2002; Marques & Paez, 1994). It thus seems reasonable that staunch party supporters should be particularly wary of counting nonvoters among members of their political in-group.

In light of this previous research, why does our research show that highly committed voters appear to be prone to in-group *overinclusion*? One reason for this finding is that we examined voters' social projection onto individuals whose party affiliations were unknown—meaning that they were neither in-group nor out-group members. But perhaps the more important reason is that our study was conducted in the context of an election, in which parties were seeking to broaden their support (i.e., they had an external focus on improving their chances in the election) rather than to identify true-blood supporters (i.e., they did not have an internal focus on purity). This interpretation is consistent with research by Morton et al. (2007), which showed that highly identified group members endorse deviant group members whose support would benefit the group. Ironically, the most strongly committed party supporters are likely to be the most flexible in assigning boundaries to their group.

In conclusion, supporters of political parties appear to overestimate public support for their party by including nonvoters as supporters. In this sense, low turnouts in elections may not pose a problem for established parties; rather, low turnouts may provide an opportunity for party supporters to overestimate the degree of public support for their worldviews.

Nonvoting as support

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Nederlandse samenvatting

(Summary in Dutch)

De rol van gespreksflow in het ontstaan en handhaven van saamhorigheid

Communicatie vormt de basis van elke sociale relatie. Door met elkaar te praten kunnen mensen gezamenlijke inzichten ontwikkelen en onderlinge relaties reguleren. Veel van het onderzoek naar communicatie richt zich op de inhoud van gesprekken: Wat wordt er gezegd? Begrijpt men elkaar? De centrale vraag in dit proefschrift richt zich vooral op *hoe* er wordt gecommuniceerd: Welke rol speelt de vorm van een gesprek in het ontstaan en reguleren van relaties?

Een gesprek wordt gekarakteriseerd door een complex patroon waarin spreken en luisteren elkaar afwisselen. De meeste mensen zijn zeer bedreven in het coördineren van hun spraak: ze voelen tot op een fractie van een seconde aan wanneer het hun beurt is om te spreken (Jefferson, 1986). Er zijn verschillende mechanismen die mensen helpen om een gesprek soepel te laten verlopen. Zo heeft men bijvoorbeeld een mentale representatie van de acties van de ander, die het mogelijk maakt om te voorspellen wanneer een ander klaar is met spreken (Sebanz & Knoblich, 2009; Clark, 1996). Daarnaast passen mensen het tempo, de toonhoogte en het taalgebruik aan elkaar aan om het onderlinge begrip te bevorderen (Giles, Coupland, & Coupland, 1991; Giles, Mulac, Bradac, & Johnson, 1987). De vorm van communicatie dient dus om informatie op een soepele manier uit te wisselen. In dit proefschrift laten we echter zien dat de soepelheid waarmee een gesprek verloopt op zichzelf ook een belangrijke communicatieve functie heeft.

In Hoofdstuk 2 presenteren we een overzicht van bevindingen over de invloed van de vorm van communicatie op het ontstaan en reguleren van sociale eenheid onder sprekers. Deze bevindingen komen zowel uit de sociaalpsychologische literatuur, als uit de sociologische en communicatie literatuur. In dit overzicht komen twee belangrijke conclusies naar voren. Ten eerste blijkt dat saamhorigheid zich kan ontwikkelen vanuit de vorm van communicatie, onafhankelijk van de inhoud. We kunnen stellen dat een gesprek een representatie is van een

sociaal systeem (een groepsverband of een sociale relatie) en dat de dynamiek van het gesprek daarmee een indicatie is voor de staat van saamhorigheid binnen dit systeem. Het blijkt dat in de vorm van een gesprek informatie verscholen zit over de hechtheid en aard van de onderlinge relaties. Hoofdstuk 3, 4, en 5 illustreren dit.

Ten tweede biedt de vorm van conversatie middelen waarmee saamhorigheid kan worden gereguleerd en geconserveerd. Wanneer een soepel lopend gesprek bijvoorbeeld wordt doorbroken door een stilte, dan wijst dit op een bedreiging van de saamhorigheid. In reactie op een dergelijke stilte kan men proberen de eenheid te herstellen, bijvoorbeeld door zich te conformeren aan de normen van de groep (Hoofdstuk 6). Ook status kan worden gereguleerd door middel van de vorm van communicatie. Groepsleden kunnen bijvoorbeeld andere sprekers onderbreken in een poging hun status in de groep te verhogen. Wanneer de normen voor hiërarchische communicatie echter nageleefd worden, kan dit de gevoelens van eenheid binnen de groep juist bevorderen (Hoofdstuk 7). Bovendien kan de vorm van communicatie helpen om een bestaande sociale realiteit te versterken (Hoofdstuk 8).

Tot slot onderzoeken we in Hoofdstuk 9 of de vorm van communicatie een rol speelt buiten de context van het gesprek.

Deel 1: Het Creëren van Saamhorigheid Door de Vorm van Communicatie

Hoofdstuk 3: Het doorbreken van gespreksflow: hoe korte stiltes in groepsgesprekken sociale behoeften beïnvloeden.

In Hoofdstuk 3 (Koudenburg, Postmes, & Gordijn, 2011a) richten we ons op een specifiek gesprekskenmerk met een grote impact: de stilte. Iedereen kent het ongemakkelijke gevoel van een stilte die de “flow” van een gesprek onderbreekt. In dit hoofdstuk onderzochten we of dit ongemakkelijke gevoel het gevolg is van een bedreiging van iemands sociale behoeften. Onze verwachting was dat een soepel lopend gesprek de sociale behoeften bevredigt. Eerder onderzoek liet al zien dat naarmate men vaker met elkaar communiceert de dynamiek van het gesprek soepeler wordt en tegelijkertijd de interpersoonlijke banden

versterken (Rabinowitz, 2008). Een soepel lopend gesprek kan daardoor (mogelijk onbewust) geassocieerd worden met het hebben van een goede onderlinge band.

Een stilte kan deze positieve dynamiek in het gesprek doorbreken. Zo laat onderzoek in Italiaans melodrama zien dat stiltes vaak gebruikt worden om confrontatie aan te geven en dus de sociale cohesie kunnen bedreigen (Piazza, 2006). Langdurige stiltes kunnen extreem pijnlijk zijn vanwege de gevoelens van afwijzing die ze oproepen (e.g., Williams & Zadro, 2001; Williams; 2001). In dit hoofdstuk laten we zien dat zelfs een enkele kortdurende stilte van 4 seconden (dat eenmalig optreedt in een gesprek van 6 minuten) een gevoel van afwijzing teweeg kan brengen. In twee studies, waarin we gebruik maakten van zowel scenario's als korte filmpjes, lieten we zien dat gespreksflow gepaard ging met een gevoel erbij te horen en een gevoel van positieve eigenwaarde. Een korte stilte doorbrak deze gespreksflow en bracht negatieve emoties en gevoelens van afwijzing teweeg. Daarnaast had men in een soepel gesprek het gevoel het eens te zijn en voelde men zich gesterkt in zijn of haar meningen. Dit onderzoek duidt op een impliciete route naar sociale validatie, waarin consensus afgeleid wordt uit de flow van het gesprek.

Hoofdstuk 4: Gespreksflow bevordert sociale eenheid.

Hoofdstuk 4 (Koudenburg, Postmes, & Gordijn, 2013a) bouwt voort op deze bevindingen door te kijken naar de rol van gespreksflow in het ontstaan van een gevoel van saamhorigheid onder gesprekspartners. We testten dit zowel onder deelnemers die elkaar voor het onderzoek al kenden, als onder deelnemers die elkaar vooraf niet kenden. Onderzoeksdeelnemers voerden een 5-minuten durend gesprek via koptelefoons die met elkaar verbonden waren door een gesloten netwerkverbinding. In de helft van de gesprekken werd de verbinding na 2.5 minuten met een seconde vertraagd. Deze vertraging bemoeilijkte de coördinatie van de spraak waardoor er stiltes en interrupties ontstonden. Resultaten van de drie studies lieten zien dat soepel gecoördineerde gesprekken (vergeleken met gesprekken waarin de flow doorbroken werd of een controle conditie waarin deelnemers om

beurten een monoloog hielden) gevoelens van sociale eenheid versterken, onafhankelijk van de inhoud van het gesprek. Deze effecten werden gedreven door de subjectieve ervaring van gespreksflow. Bovendien vindt dit proces voornamelijk plaats buiten de controle van het individu. Dat wil zeggen: zelfs als deelnemers zich bewust waren van de oorzaak van de vertraging, waren ze niet in staat om het gevoel van gebrekkige sociale eenheid te compenseren.

Deze bevindingen hebben in het bijzonder implicaties voor audiovisuele communicatie. Hoewel geavanceerde vormen van communicatietechnologie steeds meer lijken op echte face-to-face interacties, kunnen deze ironisch genoeg de ontwikkeling van sociale relaties bemoeilijken. Omdat mensen zich vaak niet realiseren dat een gevoel van eenheid wordt bevorderd door een goede coördinatie met de gesprekspartner, kunnen zij hier niet voor corrigeren op het moment dat de lijn suboptimaal functioneert en vertragingen veroorzaakt. Hierdoor kunnen gesprekspartners een slecht gevoel aan het gesprek overhouden, zonder de reden hiervoor te kunnen achterhalen. Op deze manier kan technologie op een subtiele manier de ontwikkeling van een gevoel van saamhorigheid ondermijnen.

Hoofdstuk 5: Uniforme en Complementaire Sociale Interactie: Verschillende Routes naar Saamhorigheid

In Hoofdstuk 5 (Koudenburg, Postmes, & Gordijn, 2014a) laten we zien dat de vorm van communicatie niet alleen informatie onthult over de sterkte van de saamhorigheid, maar ook over het type saamhorigheid dat gevormd is. We testten hoe verschillende sociale structuren kunnen ontstaan vanuit verschillende vormen van coactie. Daartoe vergeleken we uniforme actie (bijvoorbeeld spreken in synchronie) met complementaire actie (waarin sprekers van beurt wisselen). In de eerste studie vroegen we online respondenten naar hun ervaringen met deze beide types van coactie. In experiment 2 tot en met 5 lieten we deelnemers samen zingen of samen spreken in één van beide vormen. Resultaten van deze vijf studies lieten zien dat beide vormen een gevoel van saamhorigheid teweegbrachten. Echter, er werden verschillen gevonden met betrekking tot de positie van het individu in beide typen groepen. Waar de eenheid in uniforme groepen gebaseerd is op een

gevoel van gelijkheid en dus weinig ruimte laat voor individualiteit, valt of staat de eenheid in complementaire groepen bij de combinatie van de unieke contributies van elk individu aan de groep. Complementariteit van acties roept daarom een gevoel van saamhorigheid op dat gebaseerd is op de persoonlijke waarde die elk individu toevoegt aan de groep. Het bleek inderdaad dat in de complementaire condities, maar niet in de synchrone condities, de gevoelens van saamhorigheid werden gemedieerd door een gevoel van persoonlijke waarde voor de groep. Dit duidt erop dat de vorm van communicatie (uniform of complementair gecoördineerd) een representatie van de relatie tussen individuen vormt, waarin zowel de hechtheid als de aard van de relatie tot uiting komt.

Deel 2: Het Reguleren en Behouden van Saamhorigheid Door de Vorm van Communicatie.

Hoofdstuk 6: Doorklinkende stiltes: subtiele regulatie van normen in alledaagse interacties

In Hoofdstuk 6 (Koudenburg, Postmes, & Gordijn, 2013b) onderzochten we of de vorm van communicatie niet alleen een rol speelt bij het ontstaan van saamhorigheid, maar ook in het reguleren van deze saamhorigheid. We stellen dat normregulatie niet afhankelijk hoeft te zijn van expliciete informatieoverdracht of bekrachtiging, maar ook een gevolg kan zijn van de gevoeligheid van groepsleden voor sociale signalen in hun omgeving. We bouwen hierin voort op Hoofdstuk 3, waarin we aantonen dat stiltes een gevoel van afwijzing kunnen oproepen. In Hoofdstuk 6 testten we of deze bedreiging van iemands inclusie binnen de groep (d.m.v. een korte stilte) groepsleden kan motiveren om hun attitudes aan te passen aan de groepsnorm. In twee experimenten – waarin we gebruik maakten van zowel video's als echte gesprekken – lieten we een korte stilte vallen nadat groepsleden hun mening met betrekking tot een bepaald onderwerp (discriminatie van rokers in procedures rondom orgaandonatie) geuit hadden. Na het gesprek gaven deelnemers in een vragenlijst aan hoe ze op dat moment in de kwestie stonden. Het bleek dat deelnemers na een korte stilte hun

mening veranderden aan de hand van de groepsnorm. Deelnemers die gemotiveerd waren om bij de groep te horen verschoven hun mening in de richting van de groepsnorm, terwijl deelnemers met een lage motivatie om erbij te horen afstand namen van de groepsnorm. Wanneer er geen korte stilte was nadat deelnemers hun mening uitten, werd de mening niet beïnvloed door de motivatie om erbij te horen. De resultaten duiden erop dat sociale regulatie kan plaatsvinden door middel van subtiele signalen in de vorm van communicatie.

Hoofdstuk 7: Gespreksflow en entitativiteit: de rol van status

Naast de regulatie van normen, speelt de vorm van communicatie ook een rol in de regulatie van status binnen groepen. Onderzoek laat bijvoorbeeld zien dat mensen in positie kunnen stijgen naarmate zij meer spreektijd krijgen of claimen, bijvoorbeeld door anderen tijdens een gesprek te onderbreken (Willard & Strodbeck, 1972; Ng, Bell, & Brooke, 1993). In de meeste groepen zijn daardoor verschillende normen ontwikkeld voor communicatie met groepsleden van hoge of lage status. Het is bijvoorbeeld gebruikelijk om naar hoge status personen te luisteren en hen niet in de rede te vallen of tegen te spreken. Hoofdstuk 7 (Koudenburg, Postmes, & Gordijn, 2013c) laat zien dat het naleven van normen met betrekking tot status-gerelateerde communicatie de gevoelens van saamhorigheid in de groep waarborgt. We voorspelden dat wanneer gesprekken onderbroken worden door korte stiltes nadat iemand met een lage status in de groep heeft gesproken, dit door die persoon als storend wordt ervaren: voor groepsleden met een lage status kunnen stiltes vragen oproepen over respect en inclusie in de groep. Voor groepsleden met een hoge status kan een soortgelijke onderbreking van de gespreksflow echter geïnterpreteerd worden als een erkenning van zijn of haar bijzondere positie in de groep en daardoor de percepties van eenheid in de groep versterken. In twee experimenten waarin we gebruik maakten van zowel video's als echte gesprekken met zogenaamde proefpersonen werden deze hypothesen ondersteund. De studies laten tevens zien dat de effecten gemedieerd worden door het gevoel erbij te horen en gerespecteerd te worden. Dus, dezelfde gedragingen kunnen in gesprekken zowel positieve als negatieve effecten hebben op het gevoel

van saamhorigheid, afhankelijk van de status van de ontvanger in de groep.

Hoofdstuk 8: Meer dan woorden: sociale validatie in intieme relaties

In Hoofdstuk 8 (Koudenburg, Gordijn, & Postmes, 2014b) onderzochten we de effecten van het onderbreken van gespreksflow in intieme relaties. Hoofdstuk 3, 4 en 6 lieten zien dat stiltes de goede verstandhouding bedreigen in conversaties tussen mensen die elkaar vooraf niet goed kennen. Maar bij mensen die elkaar wel goed kennen (omdat ze bijvoorbeeld een intieme relatie hebben) zijn stiltes mogelijk veel minder storend. Vaak hebben mensen die elkaar goed kennen het gevoel dat ze geen woorden meer nodig hebben om elkaar te begrijpen, maar kunnen vertrouwen op hun kennis over de ander: ze ervaren een gedeelde realiteit (Echterhoff, Higgins, & Groll, 2005). Wanneer de flow doorbroken wordt in een gesprek met zo'n intieme partner, is het waarschijnlijk dat men terugvalt op deze gedeelde realiteit om de leemtes in de conversatie te vullen. Een doorbreking van de gespreksflow zou dus paradoxaal kunnen leiden tot een sterker gevoel van sociale validatie dan wat men zou ervaren wanneer het gesprek tussen partners gewoon soepel zou lopen (en men rekening moet houden met de daadwerkelijke mening van de ander).

In lijn met de verwachtingen liet Studie 1 zien dat de ervaren stabiliteit van de onderlinge relatie gerelateerd is aan een minder negatieve interpretatie van flow-onderbrekingen. Een indirect effect laat zien dat partners met een stabiele relatie vaker een gevoel van gedeelde identiteit ontwikkelen, wat ertoe leidt dat men stiltes eerder interpreteert als bevestiging. In Studie 2 en 3 werden de hypothesen getoetst door de flow te doorbreken in gesprekken tussen mensen met een intieme relatie (romantische partners in Studie 2, verschillende typen relaties in Studie 3). Partners werd gevraagd 5 minuten met elkaar te spreken via headsets. Om de gespreksflow te doorbreken werd in de helft van de gesprekken na 2.5 minuut een vertraging in de lijn ingesteld. Het bleek dat partners die het gevoel hadden dat ze een sterke en stabiele relatie hadden, zich meer gevalideerd voelden wanneer de

flow in het gesprek werd doorbroken, dan wanneer het gesprek soepel verliep. In Studie 3 vonden we dezelfde effecten ook voor een gevoel van gedeelde cognitie. We concludeerden dat wanneer de daadwerkelijke meningen van de partner moeilijk te achterhalen zijn, bijvoorbeeld door een gebrek aan flow, partners terugvallen op hun gevoel van gedeelde realiteit. Op deze manier kunnen doorbrekingen in de vorm van het gesprek bijdragen aan een versterkt gevoel van eensgezindheid en sociale validatie.

Het Gesprek Voorbij...

Hoofdstuk 9: Als zij zouden stemmen, zouden ze op ons stemmen

Dat een gebrek aan informatie over de mening van anderen kan leiden tot validatie wordt bevestigd in Hoofdstuk 9 (Koudenburg, Postmes, & Gordijn, 2011b), maar nu in een geheel andere context. In Hoofdstuk 3-8 is onderzoek gedaan naar de vorm van communicatie in kleine groepen en dyades. De vorm van communicatie kan echter ook een rol spelen in grote groepen, of zelfs op maatschappijniveau. In Hoofdstuk 9 onderzochten we de rol van stilte tijdens de verkiezingen: Hoe kijken kiezers aan tegen mensen die niet stemmen? In twee veldstudies testten we hoe mensen de steun voor de partij waarop zij stemmen inschatten onder mensen die niet stemmen. In een eerste schatting vroegen we mensen op straat hoeveel procent van de stemmen de partij waarop zij zelf stemden zou krijgen in de volgende verkiezingen. Daarna vroegen we ze een schatting te maken over het percentage stemmen voor hun partij, wanneer iedereen, dus ook de niet-stemmers, zou stemmen. Het bleek dat stemmers dachten dat ze een hoger percentage van de stemmen zouden krijgen wanneer ook mensen die niet naar de stembus kwamen, toch mee zouden stemmen. De stilte van niet stemmers wordt dus opgevat als steun: *wie zwijgt stemt toe*. Vooral mensen die zich sterk verbonden voelden met hun partij, verwachtten de steun van niet-stemmers. Deze resultaten geven aan dat met name wanneer er veel ruimte is om de mening van anderen te interpreteren – zoals het geval is wanneer anderen niet stemmen – toegewijde stemmers hun eigen ideeën projecteren op die van anderen,

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om zo de steun voor hun partij te vergroten. Dit onderzoek geeft daarmee aan dat de vorm van communicatie ook buiten kleine groepen en dyades een signaal kan zijn voor eensgezindheid en saamhorigheid.

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Namkje.

Curriculum vitae

Curriculum Vitae

Namkje Koudenburg (1986, Goaiïngea) grew up in a small village in Fryslân, The Netherlands. After finishing her secondary education at Bogerman College in Sneek in 2004, she moved to Groningen where she started her bachelor studies in Psychology. The last semester of her studies, she studied in Montpellier, France, at the Université Paul-Valéry. In 2007, Namkje was invited to the Research Master's program "Human Behaviour in Social Context" at the University of Groningen, where she wrote her Master's thesis on meta-stereotyping, together with Prof. dr. Ernestine H. Gordijn. After obtaining her Master's degree (*cum laude*) in 2009, she went to Addis Abeba in Ethiopia, to study the effects of laptop-projects on the social and cognitive development of children, in a project organized by Dr. Nina Hansen. During her time in Ethiopia she wrote her research proposal to apply for a PhD-position at the University of Groningen, together with Prof. dr. Tom Postmes and Prof. dr. Ernestine H. Gordijn – who became her thesis advisors. In the last stage of her PhD-research, she visited the University of Queensland (Brisbane, Australia) for three months to work with Prof. dr. S. Alexander Haslam and Prof. dr. Jolanda Jetten on the interplay between personal and social identities. In September 2013, Namkje started a position as postdoctoral researcher and lecturer at the University of Groningen.



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