CHRISTIAN TRÖSTER

Nationality Heterogeneity and Interpersonal Relationships at Work

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Nationaliteiten heterogeniteit en interpersoonlijke relaties op de werkplek

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SUMMARY

In this dissertation I argue and test three new extensions of what I refer to as the 'classical' model of workplace diversity. This model assumes that diversity affects work outcomes via the mediating effect on social networks. I show that this model can be fruitfully extended via 1) considering diversity a contextual variable rather than a main effect 2) considering alternative predictors of network formation and in particular employee behavior (i.e. employee voice), and 3) integrating the diversity perspective and the social network perspective in a contingency model. Three empirical studies support these extensions. In chapter two I investigated the leader directed voice behavior (i.e. challenging the status quo with constructive ideas for change) of managers who were dissimilar to their coworkers in terms of nationality. We hypothesized that employee nationality dissimilarity will strengthen the relationships between leader openness and leader nationality similarity with supervisor-directed voice. Results showed that leader openness and nationality similarity to the leader were more strongly related to supervisor-directed voice of nationality dissimilar managers than for more nationality similar managers. Nationality dissimilar managers were more likely to speak up to their leaders when they had the same nationality as their leaders and when leaders were open for ideas. We also explored two psychological mechanisms (i.e. psychological safety and affective commitment). Affective commitment mediated the interaction of leader openness and nationality dissimilarity but psychological safety the interaction of leader similarity and nationality dissimilarity. The second empirical study (Chapter 3) tested the argument that the relationship between a focal employee's voice behaviors on a coworker's felt friendship strength for this employee is contingent on the structural holes (i.e. missing links in a network) that disconnect the focal employee's friends from each other. The hypothesis was supported in a longitudinal study in the health care sector. We found that employee voice was related to decreases in friendship strength if employees had highly redundant networks (few structural holes) and increased friendship strength if redundancy was low (many structural holes). Finally, the fourth chapter tested the argument that the influence of team task

network structure on team performance is contingent on the nationality diversity of team members. A study of five-person teams revealed that the relationship between network centralization (in the task/workflow network) and team performance was curvilinear. Performance was higher at moderate levels of centralization than at low and high levels of centralization. This relationship was moderated by nationality diversity. Nationality diverse teams required more centralization to achieve high performance than homogeneous teams.

CHAPTER 1: INTRODUCTION

Understanding the antecedents of attitudes and behaviors of individuals and teams is crucial if companies want to effectively manage their employees' efforts and increase organizational effectiveness. One perspective on team and individual outcomes that has gained a lot of attention is organizational diversity (Pfeffer, 1982, 1983). Diversity can be conceptualized as the distribution of differences among team members with regard to some attribute (Harrison & Klein, 2007). The central premise of the diversity perspective is that diversity in organizational members' backgrounds leverages organizational performance because it increases the available pool of experiences and tacit knowledge in organizations. Team members from diverse backgrounds are supposed to challenge each other's taken-for-granted assumptions, stimulate debate, introduce a greater range of solutions to problems, and engender more careful considerations of information and take better decisions (van Knippenberg, De Dreu, & Homan, 1994; van Knippenberg, & Schippers, 2007).

In the following I will discuss the importance of nationality diversity, introduce the various extensions of this dissertation to what I refer to as the 'classical' model of diversity, and provide a summary of the empirical studies in this book.

Nationality diversity

Of the many attributes that could be considered, I focused in this book on nationality. Not only do individuals from different countries bring different ideas and ways of thinking to a team, they also bring with them different beliefs about how best to organize for task performance (e.g., Hofstede, 2001; Kirkman & Shapiro, 1997; Laurent, 1986). Nationality is relevant for work teams because it is a super-ordinate determinant of one's identity that is engrained from birth (Earley & Mosakowski, 2000; Gibson & Gibbs, 2006; Hofstede, 2001) and the generic effects of diversity will be most prominent when team members hold different nationalities (Stahl, Maznevski, Voigt, & Jonsen, 2010). Individuals from different countries bring different ideas and ways of thinking to a team (e.g., Kirkman & Shapiro, 1997; Laurent, 1986) and how to best prioritize and interpret the team's problems

(Earley, 2006). From a sense making perspective, variety within a team is an important prerequisite for registering the variety in a team's environment (Weick, 1979). Thus, nationality diversity can be a perquisite for team members' efforts to uncover their differences. Nationality diversity is particularly relevant in companies who execute global operations in a competitive international business (Jackson & Alvarez, 1992) because their nationality diverse employees form a pool of experiences and knowledge with respect to companies' international business environments (Jackson, Joshi, & Erhardt, 2003). Thus, a focus on nationality diversity seems promising because of its salience in organizations and the increasing diversity of the work force in times of globalization.

Diversity as context

Despite almost five decades of research no consistent main effects of diversity on team performance have been established (Williams & O'Reilly, 1998; van Knippenberg & Schippers, 2007). In fact, diversity has rarely had positive effects and often was unrelated to or negatively impacted work outcomes. In this dissertation I argue that we can gain new insights into the effects of diversity at the workplace by extending the 'classical' model of diversity. In its most basic form this model assumes that diversity has main effects on work outcomes through its effect on social networks (Pfeffer, 1982, 1983). Diversity affects social networks because people tend to associate with similar others (i.e. homophily) and these social networks, in turn, influence performance because they facilitate or constrain the flow of resources and are the prisms through which identities are formed.

I argue that a first limitation of this perspective is that it neglects possible contingency affects of diversity. Indeed, researchers have pointed out the promise of departing from the 'classical' main effect model of diversity and shift the focus on contingencies of diversity (van Knippenberg, DeDreu, Homan, 2004; Kearney & Gebert, 2009). In this study we will investigate diversity as context of teams (Study 1 and Study 3). Context is where other teams, departments and organizations live (Hackman, 1999). Context provides the purpose, resources, social cues, norms, and meanings that shape behavior in teams (Jackson, Joshi, & Erhard, 2003). Whereas there is some research that shows that the effect of diversity differs with contexts (e.g. organizational culture) (see Jackson, Joshi, & Erhard, 2003 for a

review) there is little research that has considered that diversity itself forms a context that affects the salience of social cues (i.e. leadership in Study 1) and a team's need for coordination (i.e. task network centralization in Study 3). Hence, a first contribution of this dissertation is to investigate the role of diversity as a contextual variable. This way I hope to facilitate a fluid conversation from main effect models of diversity to diversity as contextual factor.

The diversity-social networks relationship revisited

Whereas the diversity perspective focuses on individual employee attributes a complementary but different perspective on individual and team outcomes in organizations has focused on the interpersonal relationships between people at work and in particular the structure of their relationships. This social network perspective argues that relationships are important because they are the pipes through which resources flow and the prisms through which perceptions are formed (Podolny, 2001).

Importantly, however, the diversity literature (Reagans, Zuckerman, & McEvily, 2004; Williams and O'Reilly, 1998 for reviews) has tended to assume that these alternative approaches are interchangeable and that priority should be given to the diversity perspective (Lawrence, 1997). Combining the network perspective and the diversity perspective was motivated by the argument that the effect of demographic composition on performance is mediated by intervening processes such as network-based dynamics. Since demographic variables are easier to "access and reliably measure" and networks are influenced by demography researchers focused on demographics rather than measuring networks (Pfeffer, 1982: 351; cf. Tsui and Gutek, 1999).

But this focus on demographics has created a 'black box' that has limited our understanding of why diversity has all kinds of effects. In fact, there are good reasons to doubt that diversity can be that easily linked to social networks. First, Lawrence (1997) has questioned whether organizational networks are characterized by a significant amount of homophily. She reviewed literature that indicates that the observed levels of homophily are generally weak because a variety of contextual factors can reduce the degree of homophily inside an organization or team. For example, past experience in interacting with members of different social categories (Westphal & Milton, 2000) or

organization culture can fosters the creation of non-homphilious relationships (Chatman et al., 1998; Ely and Thomas, 2001; Polzer, Milton, and Swann, 2002). And generally, homophily varies with the degree to which group members identify with their social category (Mehra, Kilduff, & Brass, 1998). As the level of identification declines so does the tendency to form homophilious relationships. Thus, whereas there is strong support for the homophily argument there is reason to believe that its effects on networks are contingent on a range of other factors and that the strength of this effects might at times be weak.

In addition to Lawrence's (1997) critique Reagans, Zuckerman, and McEvily (2004) formulated and tested a second objection. They argued that diversity affects networks in opposing ways. First, diversity might decrease a group's cohesion as team members find it more attractive to interact with similar rather than dissimilar others. In this view, demographic diversity reduces internal coordination, which hinders a team's ability to succeed. On the other hand, diverse group members should have contacts into different social circles of people with whom they share some significant (demographic) characteristics. These connections potentially reach beyond the boundaries of the team or department and generate "information benefits" for the team because they connect team members with groups that are likely to have non-redundant information and resources (Burt 1992, Granovetter, 1973). In their study Reagans, Zuckerman, and McEvily (2004) found support for both hypotheses. Diverse teams were less cohesive, which decreased performance but they also had a broader range of external connections, which increased performance. According to these findings it seems difficult to exclusively focus on diversity and neglect social networks because diversity had ambiguous effects on social networks and hence performance

A third shortcoming of the diversity-network relationships is that diversity describes the creation of homopilious relationships. According to the diversity perspective employees form relations by choosing from the menu of attractive interaction partners offered in a given context (McPherson, Popielarz, & Drobnic, 1992). In fact, a popular perspective on diversity assumes that people will form ties with those with whom they entered the organization (i.e. tenure, Pfeffer, 1982) but does not argue

how these associations might change over time. But even in groups without compositional changes one can observe changes in relationships that thus cannot be explained solely by the invariable characteristics of group members (Moody, McFarland, Bender-DeMoll, 2002). The diversity perspective has prospered during a time when research has gravitated to the view that social networks are relatively stable. But this apparent stability does not account for change and adjustment in the ties underlying the network (e.g., Moody, 2002; Kossinets & Watts, 2006, Kilduff & Krackhardt, 2008). For example, a recent study showed that while some people had stable relationships others "dance between friends" throughout time (Moody, McFarland, Bender-DeMoll, 2005: 1208). Thus, diversity might have limited capabilities to explain network change because it assumes that actors "merely choose from the menu of associations presented by the social structure surrounding them" (McPherson, Popielarz, & Drobnic, 1992: 168) but begs the question how "intentional, creative human action serves in part to constitute those very social networks that so powerfully constrain actors in turn" (Emirbayer & Goodwin, 1994: 1413). Thus, despite the strong evidence for homophily researchers might profit from investigating other, non-stable actor attributes and consider the active role that people can play in shaping their networks.

Overall, the previous discussion concludes that the diversity-network linkage might be weak, ambiguous, and neglects the importance of human agency. Since networks are supposed to be the more proximate causes for work outcomes the next logical step in the study of intra-organizational processes should be to explore alternative explanations for the creation of social networks. In this dissertation I will highlight the importance of past networks and human agency (i.e. employee voice) for changes in relationship strength. Thus, a second contribution of this dissertation will be to tap into new antecedents of social networks and enhance our understanding of individual attributes that shape networks beyond the effects of homophily.

Integrating social networks and diversity perspective: A contingency approach

The literature on the antecedents of team performance has, at least until recently, tended to ignore the possible effects of the structure of a team's task network. But it is equally true that the

literature on team networks has tended to ignore the possibility that the effects of networks on teams may be contingent on the individual attributes of its members. Perhaps this mutual neglect stems from the fact that these perspectives are rooted in the very different intellectual lineages of psychology and structural sociology. In fact, considering the role of individual attributes has for a while been antithetical in the study of social structure (Mayhew, 1980).

In this dissertation I argue that integrating these perspectives can advance our understanding of both. In particular, I argue that networks are essentially about the structural opportunities for the mobilization and flow of resources (Lin, 2005) but this alone says little about the quality of resources in the network. Our study suggests that the effectiveness of different network properties depends on the variety of the resources that flow through the network (cf. Hansen, 1999) and diversity is one of the team dimensions that have repeatedly been associated with resource variety (van Knippenberg & Schippers, 2007). Thus, a third contribution of this study is to investigate the contingent effect of networks and diversity on team performance.

Conclusion

In a nutshell, the literature on diversity has for many years proposed that diversity affects social networks, which, in turn, affect team performance. This dissertation taps into the different components of this model and extends it in three important ways. First, rather than assuming main effects of diversity I offer a test of its relevance as a contextual factor (Chapter 2 and Chapter 4). Second, given the abundance of research on the importance of homophily for the creation of networks I propose and test new antecedents of change in networks over time (Chapther 3). And third, I show how the diversity-network-team performance perspective can be re-framed into a contingency model (Chapter 4). This dissertation provides theoretical arguments and tests of an attempt to reframe the currently dominant model of diversity in multiple and new ways.

Overview of this dissertation

In addition to the current introductory chapter, this dissertation consists of three empirical chapters and a final chapter where I present the findings and general conclusions of the present

research. Whereas all three empirical chapters address one or two extensions of the 'classical' diversity perspective, they are essentially 'stand- alone' papers that each can be read independently. As such, each chapter also makes contributions in its respective area of research. Here I will provide a summary of the studies included in this dissertation.

Chapter two deals with employee voice in nationality diverse management teams. Employee voice is the act of speaking up and making suggestions for change even when other might disagree (Van Dyne & LePine, 1998) and leadership openness has been shown to be an important antecedent of voice (Detert & Burris, 2007). Taking a relational demography perspective, we extend the leadership literature on voice by highlighting the need to consider employees' nationality dissimilarity to their coworkers and exploring a new antecedent of employee voice; similarity to the leader in terms of nationality. In particular we argue that an employee's dissimilarity to other coworkers in terms of nationality increases the salience of leader openness and similarity to the leader for employees' decision to speak up and challenge the status quo of the organization. Finally we test the mediating influence of affective commitment and psychological safety.

Chapter three deals with change of friendship strength over time. This study is important because we know quite a lot about the consequences of networks but our knowledge about its formation is limited. Moreover, whereas the voice literature has tended to assume that voice will upset interpersonal relations it has not yet tested this assumption and needs yet to engage with the possibility that the interpersonal consequences of voice depend on an employee's position in the social structure of the organization. We test the idea that employee voice can have negative consequences for friendship strength (i.e., coworkers perception that a focal employee is a good friend) because it challenges the status quo of the organization and might upset coworkers who are attached to or support the status quo. However, we argue that employee voice might also promote friendship strength as it promotes the functioning of the organization and therefore benefits other coworkers. In particular, I argue that whether employee voice will lead to positive or negative interpersonal consequences should depend on an employee's opportunity to create meaningful interpretations of it. However, employees

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in organizations pursue various interests and it might be necessary to entertain multiple interpretations of organizational change. In this second study we test whether the structural opportunity to 'sell' one's change efforts without appearing ambiguous depends on structural holes (i.e. missing links) in the network that surround two interaction partners.

Finally, chapter four investigates the contingent effect of team task network structure and diversity on team performance. The literature on task network structure is to date inconclusive about which network structure facilitates team performance but similar the diversity literature does not find consistent main effects of diversity. In this third study we argue and test whether the influence of team task network centralization is moderated by team members' nationality diversity. Thus, this study integrates the diversity and network literature.

In the final, fifth chapter of this dissertation we summarize the findings of the empirical chapters and attempt to discuss their more general implications for the 'classical' model of diversity in general as well as their more general implications.

CHAPTER 2: LEADERSHIP, NATIONALITY, DISSIMILARITY, AND VOICE IN MANAGEMENT TEAMS

Management team members with different nationality backgrounds are invaluable sources for executing global operations in a competitive international business (Jackson & Alvarez, 1992; Schuler, Dowling, De Cierie, 1993). Their ideas are important for decision-making processes (Nemeth, 1997), organizational learning (Edmondson, 1999; Senge, 1990), and overall organizational performance (Argyris & Schön, 1978; Wooldridge & Floyd, 1990). Though it is important that leaders learn about their subordinates' ideas, voicing them is a discretionary behavior (Organ, 1988) and employees often choose not to speak up and sometimes withhold information and ideas that may be important for organizational performance (Morrison & Milliken, 2000; Morrison & Milliken, 2003). This poses serious threats for organizations as they rely on employee voice for optimal functioning (Morrison & Milliken, 2000). An important question for research and practice in international business, thus, concerns the influences and processes driving leader-directed voice.

Recent models have emphasized the importance of leadership for employee voice (Burris et al., 2008; Detert & Burris, 2007). This research is important in putting leadership on the agenda in voice research, but it needs yet to engage with the possibility that voice is a relational phenomena and that the effects of leadership may be contingent on nationality differences between employees. Based on relational demography we propose that dissimilarity in terms of nationality to coworkers strengthens the leadership-voice relationship (i.e., makes voice more contingent on leadership) and particularly so in multinational companies where national background is a salient factor differentiating people and driving business performances (Hofstede, 1980, 1991; Jackson, 1995, Stahl, Maznevski, Voigt, & Jonsen, 2009; van Knippenberg, De Dreu, & Homan, 2004). Thus, a first contribution of this research is to test the interactive influences of leadership and relational demography on voice. A focus on the role of nationality dissimilarity aligns well with the fact that multinational companies rely more and more on management teams composed of employees with different national background. Nationality diverse managers form a pool of experiences and knowledge with respect to companies' international

business environments (Jackson, Joshi, & Erhardt, 2003). Their voice may stimulate debate about current strategy, introduce a greater range of strategic alternatives, and engender more careful consideration of the feasibility of such alternatives (Antonio, Chang, Hakuta, Kenny, Levin, & Milem, 2004; Jackson, 1992; Richard, 2000; Nemeth & Wachtler, 1983). But the voice necessary to achieve this cannot be taken for granted (Morrison & Milliken, 2000). Thus, in this study we aim to develop our understanding of the role of leadership in engendering the voice of nationality dissimilar managers.

Theory and hypotheses

Management team members who voice their ideas to their leaders (i.e., management team leaders) are crucial for organizational performance (Kanter, 1982; Wooldridge & Floyd, 1990). In this study we focus on leader directed voice because leaders with their greater control over and access to resources are critical for implementing suggested change and improving organizational functioning (Burris, Detert, & Chiaburu, 2008). Consistent with Burris and Detert (2007) we define *leader-directed voice* as the upward-directed discretionary provision of information intended to improve organizational functioning.

Based on research in the psychological states that may be conducive to voice we propose that dissimilarity in nationality may render individual's voice more contingent on leadership. This research points to two psychological states as mediating influences on voice: affective commitment and psychological safety. On the one hand, affective commitment, the enjoyment of membership in the organization and willingness to stay (Mayer et al., 1990), motivates employees to uphold the organization's values and pursue the achievement of its objectives (Luchak, 2003), even when this involves behaviors that extend beyond the formal job description (Shore & Wayne, 1993). Employees high in affective commitment benefit from voicing their ideas for improvement because this contributes to the viability of the organization and, therefore, the source of their good feelings (cf. LePine & Van Dyne, 1998). However, these benefits need to be offset against the potential costs

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involved in voice that result from challenging the status quo (Van Dyne & LePine, 1998). Milliken et al. (2003) reported that employees do not feel comfortable voicing ideas to their bosses because they fear being viewed or labeled negatively and Detert and Edmondson (2007) note that employees sometimes do not voice because they fear to get fired for speaking up. These concerns are captured by the concept of psychological safety – employees' belief that coworkers will not embarrass or reject one for speaking up divergent ideas (Edmondson, 1999). Psychological safety promotes leader-directed voice because it ameliorates concerns for embarrassment or threat (Detert & Burris, 2007).

As we outline in the following, there is reason to believe that the voice of nationality dissimilar managers is more contingent on leadership because they are more concerned about their affective commitment to the organization and the psychological safety in their teams. In the following, we first analyze the implications of nationality dissimilarity on affective commitment and psychological safety and then focus on two aspects of leadership that directly speak to these issues (i.e. leader openness and similarity to the leader).

Nationality dissimilarity: A relational demography perspective on voice

Research on relational demography outlines how similarities to and differences from coworkers are a key influence on individuals' working experience (Chattopadhyay, 1999; Chatman & Flynn, 2001; Riordan & Shore, 1997; Tsui, Egan, O'Reilly, 1992; Tsui & O'Reilly, 1989). Differences in national background may loom large in this respect (Chattopadhyay, George, & Lawrence, 2004). Nationality is a determinant of identity that is engrained from birth and is likely to be more salient than organizational or functional identities (Earley & Mosakowski, 2000; Gibson & Gibbs, 2006; Hofstede, 1991). Moreover, differences in nationality typically are quite salient and easily discernable through for instance accents (Gluszek & Dovidio, in press), and tend to be associated with a host of stereotypic beliefs (Fiske, 1998; Stangor, Lynch, Duan, & Glass, 1992). Thus, as outlined in social identity theory (Ashforth & Meal, 1989; Tajfel & Turner, 1986) and self-categorization theory (Hogg & Terry, 2000; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), one's national background provides a salient lens through which to perceive self and others. It invites a distinction between similar, ingroup others, and

dissimilar, outgroup others, and the associated tendency to like and trust ingroup more than outgroup members (cf. the notion of similarity/attraction; Byrne, 1971; Reis, 1998) and to be more willing to cooperate with ingroup than with outgroup members. Based on these insights research in relational demography – the "comparative similarity or dissimilarity in given demographic attributes of a supervisor and a subordinate dyad or the members of an interacting work team" (Tsui & O'Reilly, 1989, p. 403) – has shown that such perceptions of coworkers rooted in (national background-based) identity reduces (nationality) dissimilar employees' commitment to the organization, decreases their satisfied with their jobs, and increases the likelihood that they quit their job (Chattopadhyay, 1999; Jackson, 1992; Riordan & Shore, 1997; Tsui et al., 1992). Thus, (nationality) dissimilarity to coworkers may be associated with lower affective commitment to the organization, and as a consequence with lower levels of voice.

Moreover, there is reason to believe that different team members may have different experiences of psychological safety – indeed, that dissimilarity to other team members may lower one's psychological safety. Anxiety is a common phenomenon in intergroup encounters like these we find when managers of different nationalities interact in teams (Stephan & Stephan, 1985). Arguably, this anxiety should be more prevalent for more dissimilar employees than for more similar employees as they are more likely to take on the out-group member role in their interactions with other group members. Indeed, based on a review of the literature, Riordan, Schaffer, and Steward (2005) concluded that minorities experience the effect of intergroup bias and discrimination more strongly than majority members (also see Mullen, Brown, & Smith, 1992). Accordingly, we propose that there are theoretical and empirical reasons to expect that the psychological safety of nationality dissimilar employees may be lower than for more nationality-similar employees. As a consequence, voice as it may flow from a sense of psychological safety may also be lower for more nationality dissimilar individuals.

Our proposition is that the voice of nationality dissimilar is more contingent on leadership than that of their more similar coworkers. As outlined in social information-processing theory, employees

usually turn to (nationality) similar coworkers for the formation of work-related attitudes and beliefs (Festinger, 1954; Salancik & Pfeffer, 1978). Because nationality dissimilar managers are less likely to identify with other managers we propose that leaders will gain importance as guidelines for attitudes and beliefs about the workplace. In short, the thesis we develop and test in the current study is that the voice of nationality dissimilar managers is more contingent on leadership, because their affective commitment and psychological safety is more contingent on leadership (i.e., moderated relationships in a multiple mediation model).

From our relational demography perspective on voice two leadership attributes emerge as particularly relevant to nationality dissimilarity and voice. From a voice literature perspective the probably most often evoked leadership concept is leader openness (Ashford et al., 1998; Floyd & Wooldridge, 1994). Leaders who communicate openness for suggestions promote leader-directed voice because they send strong signals to employees that it is appropriate to speak up. But leader influence may also depend on leader characteristics (cf. van Knippenberg & Hogg, 2003). Research on relational demography has shown that similarities between leaders and employees exert strong effects on work behaviors because employees favor leaders who are more similar to themselves over dissimilar leaders (cf. Tsui & O'Reilly, 1989). In a context of salient differences in nationality, like the one found in multinational organizations, similarity in nationality to the leader likely is the most salient dimension in this respect. Thus, we propose that both leader openness and similarity in nationality to the leader will affect nationality dissimilar employees' voice stronger than for employees with higher nationality similarity.

Similarity in nationality to the leader and voice

Relational demography argues that employees feel more attracted to leaders with whom they share important features of their identity (Tsui & O'Reilly, 1989). Such attraction to the leader may extend to the organization (Sluss & Ashforth, 2007; van Knippenberg, van Dick, & Tavares, 2007). The reason is that leaders can be seen as representatives of the organization (Levinson, 1965) in a way that properties of the relationship with the leader "spill over" to the relationship of the employee with

the organization. Thus, we expect that nationality similarity to the leader promotes affective commitment and as a result leader-directed voice.

There is also reason to believe that similarity in nationality to the leader relates to employees' psychological safety. Having a different nationality from one's leader may foster the belief that input from people of the focal employee's nationalities are less valued than for other nationalities. Thus, employees that are dissimilar to their coworkers should be "less likely to protest directly or seek change" and more likely to "channel grievances into griping and output restrictions rather than direct action" (Kanter, 1977, p. 247).

Similarity in leader-subordinate dyads, on the other hand, should have a positive effect on employees' voice because it signals to employees that the organization values input of people like themselves (cf. Morrison & Milliken, 2000) and fosters trust between the subordinate and the supervisor (Brower, Schoorman, & Tan, 2000).

Extending our previous arguments we expect that similarity in nationality to the leader is more strongly, and positively, related to leader-directed voice for dissimilar employees than for more similar employees, and that this relationship will be mediated by affective commitment and psychological safety.

Hypothesis 1: The positive relationship between similarity in nationality to the leader and voice is stronger for employees that are more nationality dissimilar to their coworkers.

Hypothesis 2: The interaction of similarity in nationality to the leader and dissimilarity to coworkers on voice is mediated by (a) affective commitment and (b) psychological safety.

Leader Openness and Voice

Another leadership aspect that that should speak directly to nationality dissimilar employees' more precarious voice is leader openness. Leader openness is particularly important for leader-directed voice because it sends strong signals for the appropriateness of voice (Detert & Burris, 2007). Leaders who are open to their subordinates' ideas and suggestions maintain employees' initial motivation to speak up (Milliken, Morrison, & Hewlin, 2003) and decrease the salience of power differentials

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between leaders and employees in such a way that employees perceive few threats associated with raising potentially risky ideas (Edmondson, 2003). As leader openness communicates that there is little personal risk in honest communication (Bass & Riggio, 2006; Detert & Burris, 2007; Edmondson, 2003) it affects psychological safety and thereby voice. Consistent with this idea Detert and Burris (2007) found that leaders who were perceived as being open to new ideas and suggestions engendered voice through their effect on employees' psychological safety. Similarly, Dutton and colleagues (1997) found that middle managers 'read the wind' to assess if their suggestions would be welcomed by top managers. Top-managers' willingness to listen was among the most often named facilitators for directing top-managers' attention to issues that required change. Moreover, the experience that leaders welcome suggestions for improvement and that one can address sources of dissatisfaction and actively contribute to changes in the work environment signals individuals that they are valued and respected members of the organization (Lind & Tyler, 1988) and increases employees' affective commitment (cf. Korsgaard, Schweiger, & Sapienza, 1995).

We may thus predict that leader openness is more strongly, and positively, related to leader-directed voice for nationality dissimilar employees than for nationality similar employees. Again, we may expect that this interactive relationship is mediated by affective commitment and psychological safety.

> *Hypothesis 3: The positive relationship between leader openness and voice is stronger for employees that are more nationality dissimilar to their coworkers.*
>
> *Hypothesis 4: The interaction of leader openness and dissimilarity in nationality to coworkers on voice is mediated by (a) affective commitment and (b) psychological safety.*

Methods

Procedures and Participants

The sample for this study consisted of managers of a Dutch multinational company in the logistic branch, which operates as one of the global market leaders in storage and handling of liquid

products. Managers worked together in teams on translating the company's policy into goals, objectives, strategies, and a shared vision of the future within their divisions. The importance of new ideas for continuous improvement renders voice especially relevant in this context (LePine & Van Dyne, 1998). The company is divided in divisions according to its regional activities and sustains terminals and offices all over the world including Europe, Middle East, Africa, Asia, North America, and Latin America. As a consequence of the company's policy to employ workforces from the various countries in which it operated the sample was comprised of 30 different national backgrounds. Dutch were the most represented nation with 119 employees (47%) followed by Singaporeans (11.1%). This sample is unique in that it brings together a great variety of nationalities spread over different countries (indeed, continents) so there is no one nationality that is always in the majority, allowing us to determine that we are truly dealing with the influence of dissimilarity and not with that of covarying cultural differences. The present sample thus provides a rich context to test hypotheses about nationality dissimilarity. The presence of many nationalities rendered national background as a social category salient, which was also confirmed by initial interviews with employees from various divisions and the HR director.

Of 308 middle-managers, we received 225 usable questionnaires (for a response rate of 73.05%). The age of respondents in this sample ranged from 24 to 65 years ($M = 43.78$, $SD = 9.31$). Their organizational tenure ranged from 1 to 42 years ($M = 11.28$, $SD = 10.37$). Eighty-seven percent of our sample was male. A total of 39 work groups comprised our study's sample. Group size was, on average, 6.5 employees ($SD = 4.63$). Because the length of the questionnaire was restricted by the HR director we used shortened scales for two of our measure, psychological safety and affective commitment. However, these shortenings were similar to those earlier in research on voice and leadership and thus enhance comparability of the results between studies.

Measures

Leader-directed voice. We assessed voice directed at supervisors with three items from Detert and Burris (2007). Items were, "I give suggestions to my supervisor about how to make this

organization better", "I speak up to my supervisor with ideas about doing things differently", and "I speak my mind to my supervisor about the way things are around here". Answers were provided by employees on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*) and were averaged to form a scale (α = .90).

Leader openness. We used three items from Ashford and colleagues' (1998) top management openness scale (α = .90) and averaged them to form an individual score. Answers were provided by employees on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). Items were, "My supervisor is open for suggestions", "Good ideas get serious consideration from my supervisor", and "When good suggestions are made to my supervisor, they receive fair evaluation".

Nationality dissimilarity to coworkers. We asked respondents to indicate the country which best captures their nationality out of a choice of all countries in the world (the selection appeared in a pull-down menu in the online survey). We constructed nationality dissimilarity scores as the difference between a focal employee and his or her peers on this dimension using Tsui and colleagues' (1992) formula: The square root of the number of coworkers with a different nationality from the focal employee's, divided by the total number of employees in a work group. Scores were computed so that larger score meant that an employee was more nationality dissimilar from his or her peers. Score ranged from 0 to .98 with a mean of .52. Thus, a score of .98 or close to it means that there was a single individual in larger group of otherwise dissimilar coworkers.

Similarity in nationality to leader. Respondents were asked if they had the same nationality as their leader. In line with Tsui and colleagues (1989) we used a dichotomous variable. We coded this variable zero for dissimilar dyads and one for similar dyads.

*Affective commitment. W*e assessed affective commitment with the organization with four items (α = .69) on a response scale ranging from "strongly disagree" (1) to "strongly agree" (7). Items were taken from Allen and Meyer's (1990) measure of affective commitment. Items were "I would be very happy to spend the rest of my career with [Name of the company]", "I enjoy discussing [Name of the

company] with people outside it", "[Name of the company] has a great deal of personal meaning for me", and "I do not feel 'emotionally attached to [Name of the company]" (reverse coded).

Psychological safety. We assessed this construct with three items ($\alpha = .85$) on a response scale ranging from "strongly disagree" (1) to "strongly agree" (5). Consistent with Detert and Burris (2007) we adopted items from Edmondson's (1999) psychological safety in teams scale to tap individual-level psychological safety. Items were "It is safe for me to speak up around here", "In this team, I feel safe to discuss problems and difficult issues", and "In this team, I feel safe to say my opinion and make suggestions for improvement even when others disagree".

Control Variables. We controlled for a number of constructs that were not of direct theoretical interest, but could have influenced the relationships among our study variables. First, to be consistent with earlier research on relational demography we included dissimilarity scores for gender, tenure, and age. We included dissimilarity scores for the relation to the leader and to coworkers. We also included job satisfaction, gender, age, and tenure because it might affect both supervisor ratings and voice (LePine & Van Dyne, 1998; Van Dyne & LePine, 1998). Relationship length with one's supervisor was included to control for the possibility that subordinates become more confident as they know their supervisor better (cf. Vecchio & Bullis, 2001). Finally, it might be that employees do not voice because they feel they have no valuable ideas. Therefore, we asked respondents with two items on a scale from one to seven (strongly disagree" (1); "strongly agree" (7)) if they had ideas (e.g., "I have ideas about how to make this company better") and included this information as control variable.

Results

Measurement model. Before hypothesis testing we performed confirmatory factor analysis (CFA) to assess the distinctiveness of the measures (Gerbing & Anderson, 1988). Our measurement model with five distinct factors (i.e. voice, psychological safety, affective commitment, leader openness, having ideas, and job satisfaction) did a more adequate job explaining the data (NFI = .85; CFI = .91; GFI = .85; AGFI = .81; RMSEA = .08) than a three-factor model in which we combined affective commitment and job satisfaction, leader openness and psychological safety, and voice and

having ideas (NFI = .73; CFI = .78; GFI = .74; AGFI = .69; RMSEA = .12), or a model in which all variables loaded on the same factor (NFI = .41; CFI = .44; GFI = .48; AGFI = .36; RMSEA = .18). Moreover, the five-factor model significantly fitted the data better than the three-factor ($\chi^2\Delta[6]$ = 396.76; p < .001) or the one-factor model ($\chi^2\Delta[5]$ = 1444.35; p < .001). Thus, respondents in our sample distinguished between the different constructs.

Nested data structure. Research has emphasized the need of attending to nested data structure to avoid overestimating the effects of relational demography (Sacco, Scheu, Ryan, & Schmitt, 2003). Our theory nests employees' voice within work groups. Therefore, we conducted multilevel analyses to account for the hierarchical structure of our sample (Snijders & Bosker, 1999). This way we were able to estimate effects at the individual level while accounting for the nested structure of our data. We used the xtmixed option in STATA 9.0 to fit linear mixed models with fixed effects analogous to regression coefficients with employees nested within work groups, using restricted maximum likelihood estimation. We also computed the proportional reduction of prediction error when predictors were added to the model, which is analogous to effect sizes or R^2 in multiple regression analysis (Snijders & Bosker, 1999). The significant between-group variances support our choice for multilevel modeling. We centered all variables prior to analysis (except the dichotomous variables gender and similarity in nationality to the leader) to minimize multicollinearity among predictors (Aiken & West, 1991). Descriptive results are shown in Table 1.

Table 1 Means, standard deviations, and intercorrelations among study variables

Variables	Mean	Std.dev.	1	2	3	4	5
1. Leader directed voice	5.88	0.88					
2. Gender (1 = Male; 2 = Female)	1.13	0.34	.01				
3. Age (years)	43.78	9.31	-.12	-.12*			
4. Tenure (years)	11.28	10.37	-.06	-.16**	.73***		
5. Having Ideas	5.64	0.94	.29***	.00	-.16**	-.18**	
6. Relationship length (month)	25.57	24.83	-.12*	-.07	.24***	.24***	-.17**
7. Overall job satisfaction	4.13	0.67	.20***	-.01	-.02	-.11†	.20**
8. Leader openness	4.11	0.78	.45***	.04	-.13*	-.09	.12*
9. Psychological safety	4.04	0.78	.27***	.03	-.02	-.05	.12*
10. Affective commitment	5.24	0.88	.35***	-.13*	.02	.06	.19*
Similarity to leader							
11. Gender	0.84	0.37	.01	-.89***	.13*	.15*	.04
12. Age	0.32	0.47	.00	.07	.03	-.01	.05
13. Tenure	0.21	0.41	.07	.17*	-.10	-.12*	.04
14. Nationality	0.59	0.49	-.01	-.07	-.07	.07	-.07
Dissimilarity to coworkers							
15. Gender	0.28	0.29	.01	.67***	-.18**	-.18**	-.01
16. Age	9.99	3.94	.03	-.11†	.19**	.22***	-.05
17. Tenure	11.60	5.97	.00	-.08	.32***	.50***	-.10
18. Nationality	0.51	0.33	.02	-.06	.07	.06	-.02

† $p = 0.10$. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Table 1 (continued) Means, standard deviations, and intercorrelations among study variables

6	7	8	9	10	11	12	13	14
.01								
-.07	.36***							
-.01	.30***	.48***						
.03	.41***	.32***	.29***					
.05	.09	-.02	.03	.14*				
.04	.01	.01	.07	.01	-.06			
.02	.00	.13*	.09†	-.05	-.12*	.29***		
.06	-.04	-.09	.00	-.07	.08	.04	-.03	
-.11	-.04	.07	.06	-.10	-.64***	.02	.14*	-.01
.07	-.11†	-.09	-.09	.05	.09	-.23***	-.25***	-.04
.03	-.11†	-.08	-.01	-.02	.08	.03	-.24***	.09
.02	-.01	.04	.02	.07	.06	-.07	.03	-.26***

Table 1 (continued). Means, standard deviations, and intercorrelations among study variables

15	16	17
-.08		
-.09	.51***	
-.05	-.03	-.12†

Table 2 Direct and Indirect Effects of Leadership Openness and Nationality Dissimilarity on Leader directed Voice

Variables	Model 1: Voice	Model 2: Voice	Model 3: Voice	Model 4: Safety	Model 5: Attachment	Model 6: Voice	Model 7: Voice
Control variables							
Gender	-0.15	0.24	0.34	0.28	-0.18	0.22	0.31
	-0.37	(0.35)	(0.34)	(0.28)	(0.38)	(0.34)	(0.33)
Age	-0.01	0.00	0.01	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Tenure	0.00	0.00	0.00	0.00	0.01†	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Having ideas	0.30***	0.28***	0.30*	0.04	0.13*	0.26***	0.27***
	(0.06)	(0.06)	(0.06)	(0.05)	(0.06)	(0.06)	(0.06)
Relationship length	-0.01*	0.00†	0.00*	0.00	0.00	0.00*	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Overall job satisfaction	0.20*	-0.07	-0.07	0.08	0.34**	-0.15	-0.14
	(0.09)	(0.10)	(0.09)	(0.08)	(0.10)	(0.09)	(0.09)
Leader-subordinate similarity							
Gender	0.01	0.23	0.25	0.33	0.34	0.07	0.10
	(0.34)	(0.31)	(0.31)	(0.21)	(0.34)	(0.30)	(0.30)
Age	-0.12	-0.15	-0.17	-0.02	-0.04	-0.14	-0.16
	(0.12)	(0.11)	(0.11)	(0.01)	(0.12)	(0.11)	(0.11)
Tenure	0.24†	0.08	0.09	0.01	-0.18	0.13	0.13
	(0.14)	(0.13)	(0.13)	(0.01)	(0.14)	(0.13)	(0.13)
Nationality		0.22*	0.22*	-0.29	-0.02	0.22*	0.23*
		(0.11)	(0.11)	(0.22)	(0.12)	(0.11)	(0.11)

Table 2 (continued) Direct and Indirect Effects of Leadership Openness and Nationality Dissimilarity on Leader directed Voice

Dissimilarity to coworkers

Gender	0.02	-0.04	-0.11	0.33	0.11	-0.14	-0.19
	(0.34)	(0.24)	(0.23)	(0.21)	(0.27)	(0.23)	(0.22)
Age	0.01	0.02	0.02	-0.02	0.02	0.02	0.03
	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)
Tenure	0.24	0.01	0.01	0.01	-0.01	0.01	0.01
	(0.14)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Nationality		0.19	-0.29	-0.29	0.08	0.15	-0.24
		(0.16)	(0.25)	(0.22)	(0.28)	(0.15)	(0.25)
Leader openness		0.52***	0.56***		0.31***	0.36***	0.41***
		(0.07)	(0.07)		(0.08)	(0.09)	(0.08)
Psychological safety						0.23**	0.21*
						(0.08)	(0.08)
Affective committment						0.17**	0.15*
						(0.06)	(0.06)
Leader openness X nationality dissimilarity to coworkers			0.47*	0.10	0.46* (0.23)		0.38†
			(0.21)	(0.17)			(0.21)
Nationality similarity to leader X nationality dissimilarity to coworkers			0.65*	0.56*	0.00 (0.34)		0.53†
			(0.31)	(0.26)			(0.31)
Workgroup	0.03*	0.01*	0.00*	0.02*	0.02*	0.01*	0.00*
	(0.03)	(0.01)	(0.00)	(0.02)	(0.02)	(0.01)	(0.00)
R^2	0.18	0.34	0.36				0.39
ΔR^2		0.16	0.02				0.03

Note. $N = 253$, $k = 39$. Unstandardized coefficients are reported, with standard errors in parentheses. R^2 = variance explained by each model, computed as the proportional reduction in the Level 1 variance component of dependent variable scores. R^2 for Step 1 is based on a comparison with a null model (intercept only) and R^2 for Model 7 is based on comparison with Model 3. Work group = estimate of the random variance between work groups. Significance levels are two-tailed. † $p = 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Hypothesis tests. Table 2 shows the results of the hypothesis tests. Model 1 includes the multilevel estimates of control variables. We compared the fit of this model to an intercept-only null model. Model 1 shows that job satisfaction, having ideas, and relationship length with the supervisor was significantly related to voice. We added leader openness, similarity in nationality with the supervisor, and nationality dissimilarity with coworkers in Model 2. In Model 3, we entered the two interactions. The results of Model 3, the final model, show that both interactions, leader openness by nationality dissimilarity to coworkers ($\gamma = .47$; $p < .05$) and similarity in nationality with the supervisor by nationality dissimilarity to coworkers ($\gamma = .65$; $p < .05$) significantly affect voice. To explore the form of the interaction we followed Aiken and West (1991) and computed simple slopes for leader openness and similarity in nationality to the leader conditional upon nationality dissimilarity to coworkers one standard deviation below and above the mean. The simple slopes are depicted in Figures 1 and 2. Figure 1 shows that the relationship between similarity in nationality to the leader and nationality dissimilarity to coworkers and voice is stronger for nationality dissimilar individuals than for more nationality similar individuals. The pattern for the interaction between leader openness and nationality dissimilarity with the coworkers was similar (Figure 2). In sum, we found support for Hypotheses 1 and 3.
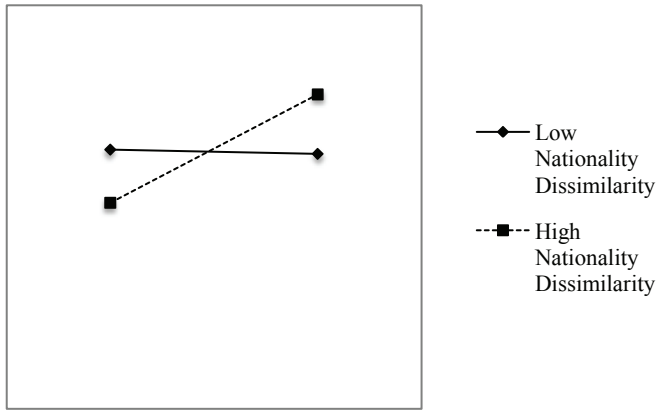
Figure 1 Effect of the Interaction between Dissimilarity in Nationality to the Leader and Nationality Dissimilarity to the Coworkers on Leader Directed Voice
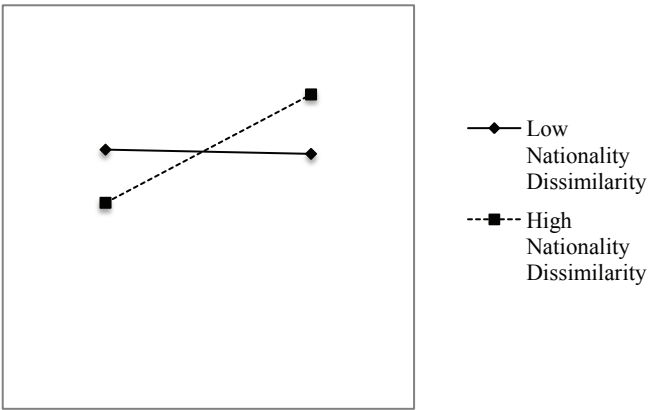
Figure 2 Effect of the Interaction between Leader Openness and Nationality Dissimilarity with the

Coworkers on Leader Directed Voice

Mediation test. To test Hypothesis 2 and 4, we followed the four-step method recommended by Baron and Kenny (1986) (see also Muller, Judd, & Yzerbyt, 2005) and the model by Preacher and Hayes (2008) to test multiple mediators in mediated moderation. According to the four-step method, one must establish significant relationships between the independent variable (the interaction term) and the dependent variable, between the independent variable and the mediating variable, and between the mediating variable and the dependent variable. Finally, the association of the independent variable with the dependent variable must decrease when the mediator is involved. The support found for Hypothesis 1 and 3 in Model 3 (Table 2) satisfied the first step. Step two was only satisfied when psychological safety was regressed on the interaction between leader openness and national dissimilarity to coworkers (Model 4) or when affective commitment was regressed on the interaction between similarity in nationality to the leader and nationality dissimilarity with the coworkers (Model 5). As required by step three, both psychological safety and organizational attachment predicted voice (Model 6). Finally, when the interaction terms are introduced in the regression together with psychological safety and affective commitment the interactions become non-significant. Thus, the results suggest that the interaction of leader openness and nationality dissimilarity to coworkers on voice is mediated by affective commitment and that the interaction of similarity in nationality to the supervisor and nationality dissimilarity to coworkers is mediated by psychological safety. To test if the reduction in the interactions due to psychological safety and affective commitment was significant we used bootstrapping to assess the significance of indirect effects (Shrout & Bolger, 2002). In particular, we were interested in the question of whether psychological safety and affective commitment jointly predicted voice. Thus, we employed mediation analysis using bootstrapping procedures to assess and compare indirect effects in *multiple* mediator models (Preacher & Hayes, 2008). We constructed confidence intervals based on 10,000 random samples with replacement from the full sample (Stine, 1989). The results supported our conclusion. The coefficient for the indirect effect of affective commitment in the relationship between leader openness and nationality dissimilarity to coworkers and voice was .07, and the bias corrected 95 percent confidence interval excluded zero, $CI_{95\%}$ [.01;

.21]. Since mediation is present when the size of an indirect effect is significantly different from zero (Shrout & Bolger, 2002), this confidence interval suggest that affective commitment operates as a mediator. At the same time, the indirect effect of psychological safety was not significant ($\zeta = .02$, $CI_{95\%}$ [-.06; .17]). For the interaction between similarity in nationality to the leader and nationality dissimilarity to coworkers the indirect effect was significant for psychological safety ($\zeta = .12$, $CI_{95\%}$ [.01; .33]) but not for affective commitment ($\zeta = .00$, $CI_{95\%}$ [-.12; .10]). Overall, we found asymmetric results for our proposed mediation model. Psychological safety fully mediates the interaction between leader openness and nationality dissimilarity to coworkers and affective commitment fully mediates the interaction between similarity in nationality to the leader and nationality dissimilarity to coworkers. Thus, we found partial support for Hypotheses 2 and 4.

Discussion

This field study among managers in a highly diverse multinational company found that the voice of nationality dissimilar managers was more contingent on leadership than for more similar managers. Leader openness had a positive relationship with voice and this effect was stronger for employees that were dissimilar in nationality to their coworkers than for more similar employees. Moreover, nationality similarity to the leader was more strongly related to leader-directed voice for employees that were nationality dissimilar to their coworkers. While these interactive relationships with voice were completely as predicted, our mediation model was only partly supported. The interaction between leader openness and national dissimilarity to coworkers was mediated by affective commitment whereas the interaction between nationality similarity to the leader and nationality dissimilarity to coworkers was mediated by psychological safety.

Implications for Research on Leadership and Voice

The present work has several important theoretical implications. Perhaps most importantly, our findings reveal new insights into the nature of employee voice. In particular, our findings highlight voice as a relational phenomenon. Voice is a socially risky behavior (Van Dyne & LePine, 1998). As a

consequence, voice depends on employees' motivation to improve the organization and the belief that coworkers will not punish or reject them for voicing their ideas. Whereas current leadership models emphasize the importance of leadership to increase motivation and psychological safety these models have not considered the possibility that leadership might be more important for employees who are dissimilar to their coworkers. The current integration of relational demography and voice research thus is a valuable extension of the study of leadership and voice. In developing this perspective, we also identified a new leadership antecedent of employee voice: similarity in nationality to the leader. Nationality similarity to the leader increased leader-directed voice more for employees that were nationality dissimilar to their coworkers than for more similar coworkers.

This further supports our proposition that leader-directed voice can be understood as relational phenomena and in particular the demographic similarity or dissimilarity that characterizes these relations. Thus, voice might be more of a relational behavior than has been suggested before (e.g., LePine & Van Dyne, 2001) and future research might explain more variance in voice when taking a relational demography perspective or focusing on other attributes that can characterize the relationship between employees and leaders. Social network analysis could be a helpful means to further explore this idea. Unlike relational demography, social network analysis allows to directly measure the relations between employees instead of inferring them (Lawrence, 1997) and to formulate and detect effects that go beyond the level of the dyad. Interestingly, people sometimes change their attitudes to maintain balanced relationships in their social networks (Heider, 1958). Thus, instead of proposing effects of (dis)similarity within coworker or leader dyads it might be that indirect relationships play another important role for the formation of work attitudes and, hence, voice. For example, an employee's association with a boundary spanner (e.g., someone who bridges two different demographic subgroups) may attenuate the negative work attitude associated with being dissimilar from one's coworkers (cf. Pettigrew, 1998).

The findings of our study may also help to resolve some of the inconsistencies in the diversity literature. A central argument in diversity research is that diversity of group members may have

positive effects on group performance. The information/decision-making perspective argues that diversity introduces a pool of knowledge, expertise, and perspectives that helps work groups perform better and stimulates creativity and innovation beyond the possibilities of homogenous work groups (Williams & O'Reilly, 1998). However, there is inconsistent evidence for this prediction (Stahl et al., 2009; van Knippenberg & Schippers, 2007). Van Knippenberg et al. (2004) argued that one reason for suboptimal performance of diverse teams is disrupted information elaboration (group-level exchange, processing, and integration of diverse information and perspectives). By focusing on employee voice our study zoomed in on a critical individual level antecedent of group-level information elaboration. In particular, the most important inputs for high-quality decisions and innovations in multinational companies might come from group members with dissimilar nationalities, but as our study shows their input is at risk if leaders do not respond to their needs for affective commitment and psychological safety. Thus, our results seem to suggest that leader openness and leader similarity to subordinates might also be important for group performance. Future research on group diversity and group performance might benefit from these insights.

A second objective of our study was to understand the underlying processes governing employee voice in nationality diverse teams. We hypothesized that affective commitment and psychological safety would mediate both of our interactions independently but found only partial support for our hypotheses. The interaction of leader openness and dissimilarity to coworkers was mediated by affective commitment and not by psychological safety, whereas the effect of similarity in nationality to the leader and dissimilarity to coworkers was mediated by psychological safety and not by affective commitment. This finding holds two important insights. First, though both mediators are correlated, we find that affective commitment and psychological safety both contribute independently to the explanation of voice. Second, our data show that the voice of nationality dissimilar employees is affected by different leadership aspects but for different reasons. A possible explanation could be that employees who are nationality dissimilar to their coworkers and who perceive their supervisor to have the same nationality as themselves are unlikely to infer that the organization as a whole is a good place

for people like themselves. The observations that "one of them" could make it into a higher position could be seen as a "token" promotion or hiring decision rather than as representing the organization's inclusive attitude. Instead, similarity in nationality to the leader may build a sense of interpersonal safety that does not generalize to attitudes towards the organization at large.

For leader openness the reasons for the findings of our mediation analysis are more difficult to pinpoint. Commitment is rather problematic for dissimilar employees and less for similar employees as, by and large, dissimilar employees are less attracted to their work place (Tsui et al., 1992). A leader who is open for suggestions communicates to dissimilar employees that they are invited to shape their work place and increases their affective commitment to engage for the good of the organization. The interpretation of the non-significant mediation effect of psychological safety is more complicated. One possible explanation is that nationality dissimilar employees are not confident that leaders will appreciate their ideas as the ideas itself might be more challenging to the status quo compared to the ideas commonly made by nationality similar coworkers.

Having said this, our research focused on individual differences in nationality. We did so because we had good reasons (e.g., interviews with employees) to assume that other categories were not salient within our sample. This approach is consistent with Pfeffer (1983) who argued that theories revolving around organizational demography should be developed for the variable of interest. However, our model should also hold for other categories as long as they are meaningful in a given context and useful for employees to categorize themselves and coworkers (van Knippenberg et al., 2004). Thus, future research might extend our model to other relational attributes when focusing on contexts where there is reason to expect these to be salient (e.g., gender differences in the military).

Finally, our study also provides interesting directions for research on other extra-role behavior than voice. In particular research on discretionary behaviors that are by definition not required by job descriptions (Organ, 1988) might benefit from the insights gained through this study. The study of work behavior that depends on affective commitment or psychological safety should benefit from the findings of this study. For example, it might be that the interaction of leader openness and dissimilarity

to coworkers also holds for helping or workplace deviance.

Limitations

Several limitations of this research warrant notice. First, we used perceptual data because leader influence ultimately depends on employees' subjective impressions of what their leaders do or who they are (Bandura, 1989) even though this perceptions can be "objectively" wrong (Detert & Burris, 2007). An interesting question for further research in this context is if dissimilar employees' leadership perceptions differ from those of more similar employees when compared against an objective standard. Second, one might argue that common method variance may account for some of our findings because the dependent and independent variables were rated by the same persons (but not the moderator). However, there is empirical evidence that shows that common method variance, if anything, makes the detection of interaction effects more difficult (Evans, 1985; McClelland & Judd, 1993) and in particular so because it is unlikely that participants had a "cognitive map" to anticipate our proposed interaction (Chang, van Witteloostuijn, & Eden, 2010). Thus, the test of the interactions in our analyses should be considered conservative. Finally, as for all cross-sectional research, we cannot conclude causality. It might be that employees who voice more often also experience their leaders as more open to suggestions. Though this would not explain our interaction effect, we need experimental designs to establish the causal direction of our findings.

Practical Implications

Our research has important implications for the leadership of managers in multinational organizations. It shows that leader openness is more important for employees who are dissimilar in nationality to their coworkers than for employees who are more similar to their coworkers. Employees that are more nationality similar to their coworkers, however, are in less need of leader openness. Thus, instead of assuming a "one size fits all" leadership style, leaders need to scrutinize the nationalities of their subordinates, compare them to the nationalities of the other subordinates in the team, and then respond accordingly. This also points to a possible caveat for leaders who do not differentiate between the group level and the level of the employee: In groups with a strong national

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majority leaders might too quickly assume that their subordinates readily voice ideas and reduce their efforts in engendering voice. Though this would have no consequences for most of the employees in such a work group, it does little justice to the needs of the team members that represent minorities in terms of their nationality. As a consequence, leaders might often miss the opportunity to promote genuine and distinct input to improve the organization.

Our study also holds implication for the selection of leaders. Employing leaders with a minority background is more and more an issue for organization. Our results show that more nationality dissimilar employees will respond to this with higher levels of voice. The voice of the majority, that is the employees that are more nationality similar to their coworkers, however, will remain unaffected. Thus, our results make a case for the promotion and employment of leaders from minorities.

Conclusion

In multinational companies diversity in nationalities has been shown to be important for team and organizational performance. One of the key assumptions of these studies is that group members with dissimilar nationalities hold valuable information with respect to companies' international business environments. The present study shows that in particular the voice of employees who are nationality dissimilar to their coworkers is at risk and that leader openness and similarity in nationality to the leader are important means of encouraging nationality dissimilar employees to make suggestions for improvement. Moreover, our results show that these relationships are mediated by different processes. We hope that the current findings provide a firmer ground for the understanding of leadership   of   dissimilar   employees

CHAPTER 3: EMPLOYEE VOICE AND SOCIAL NETWORKS

Employees' personal initiatives for improving organizations are crucial for dealing with new challenges and for the continuing improvement of products and services. Prosocial employee voice deals with employee's critical suggestions for change with the aim of improving the organization (LePine & Van Dyne, 1998). Much research on voice has been motivated by the observation that employees often withhold critical issues and suggestions for improvement and the considerable consequences this can have for organizations and humans (Greenberg & Edwards, 2009). Consequently many studies have focused on the predictors of voice. However, despite the importance of these studies for our understanding of employee voice they have left a "black box" around the interpersonal consequences of employee voice, which has yet to be explored. A first contribution of this study is to investigate the interpersonal consequences of voicing organizational change.

A social networks perspective provides a fruitful perspective for the analysis of the interpersonal consequences of voice. Social network theory deals with the web of relationships that connect persons in an organization (Borgatti & Foster, 2003; Scott, 2000). An important insight of network theory is that not the direct connections of a focal person but the links between this person's contacts have important consequences for employees (Wellman, 1988). For example, there is considerable evidence that employees whose contacts are not connected to each other (i.e.structural holes) (Figure 1) accrue more benefits in terms of higher performance evaluations and faster promotions (e.g., Burt, 1992; Burt, 2005; Burt, 2009). In this study we will test whether these benefits also hold for employee voice.

Examining the influence of voice behavior on network change is important because we know that network structure at one point in time has important consequences but studies on the evolution of networks in organizations are rare. Research has gravitated to the view that that social network structures arise from repeated interactions over time and are therefore relatively stable (e.g., Nadel, 1957; Tichy, Tushman, and Fombrun, 1979). But this apparent stability ignores the considerable

change and adjustment in the relationships between members of a group (e.g., Moody, 2002; Kossinets and Watts, 2006; Kilduff and Krackhardt, 2008). For example, a recent study showed that while some people entertained stable relationships others "dance between friends" throughout time (Moody, McFarland, Bender-DeMoll, 2005: 1208).

A focus on voice seems particularly fruitful for the understanding of network change because most recent studies have explained the formation of networks due to peoples' attraction to similar others (i.e. homophily) or opportunity (i.e. proximity). These studies suggest that actors "merely choose from the menu of associations presented by the social structure surrounding them" (McPherson, Popielarz, & Drobnic, 1992: 168) but beg the question how "intentional, creative human action serves in part to constitute those very social networks that so powerfully constrain actors in turn" (Emirbayer & Goodwin, 1994: 1413). This has led to calls for investigating the role of organizational behaviors in network change and their interaction with past network positions (Bolino, Turnley, Goodblood, 2002; Brass, forthcoming). Thus, a second contribution of this study is to test new arguments about the role of employee voice in network change and its contingency on the past network structure.

Theoretical Background and Hypotheses

Behaviors that go beyond employees' job description are crucial for organizational performance (Katz, 1964). Van Dyne, Graham, and Dienesch (1994) differentiated between behaviors that are required or expected from an employee's role in the organization (i.e. in-role behaviors) and those that go beyond these formal expectations. Of particular interest for organizations are discretionary behaviors that promote the functioning of the organization through employees' proactive efforts. Voice describes those behaviors that are discretionary and emphasize expression of constructive challenge with suggestions for improvement rather than merely criticizing even when others disagree (Van Dyne & LePine, 1998: 109).

Employee voice aims at improving the organization. Unfortunately, organizations might face a paradox because they rely on employees' suggestions for change but employees often withhold their voice because they fear negative consequences (Morrison & Milliken, 2000). One reason is that voice implicitly criticizes the status quo and the people who have helped devise or support it. People feel threatened by negative feedback about a course of action with which they identify because the possibility of receiving negative information about oneself may be threatening to one's self-image (Ashford & Cummings, 1981). The goal to maintain a positive self image (Fiske, 2004) may deter people from engaging in interactions with the source of voice, discount it as attempts of the source of criticism to pursue self-serving goals (Baumeister & Scher, 1988; Porter, Allen, &Angel, 1981), or engage in aggression against it (Bushman & Baumeister, 1998). As employees increase their voice they are more likely to be perceived as manipulative (Ashforth & Gibbs, 1990), "rocking the boat" (Redding, 1985), and being "troublemakers" (Morrison, Milliken, & Hewlin, 2003). Therefore, employee voice holds the potential to upset interpersonal relationships or create negative impressions (Stamper & Van Dyne, 2001).

An alternative view highlights the positive, instrumental consequences of voice for employees. Given the dynamic nature of today's business climate challenging the status quo might be particularly important for business performance (Van Dyne & LePine, 1998) and employees seem to agree that promoting organizational improvement should be rewarded (Marinova, Moon, & Lynn, 2010). Voice helps to dissolve dissatisfying issues (Hirschman, 1970), improve the work flow (Van Dyne & LePine, 1998), and formulate novel solutions for organizational problems (Zhou & George, 2001). Since, efficient production is a collectively beneficial outcome (Ullmann-Margalit, 1977) voice should elicit positive reactions from others. Thus, besides the risk of impaired interpersonal consequences we think there is sufficient reason to believe that voice can also strengthen interpersonal bonds. But when will voice experienced as negative and when as positive?

Voice and coworkers' interpersonal responses

In terms of interpersonal relationship people consider the various negative and positive experiences that arise from their interactions with others and sever or continue ties on the basis of these judgments (Kelley & Thibaut, 1978). Van Dyne and colleagues (2003) argued that organizational members' reactions to employee voice such as rewards and punishments are influenced by the image that they have about the performer of employee voice. This suggests that when coworkers are convinced of the prosocial nature of the advocated changes and their potential to improve the workflow they will be likely to respond positively by strengthening their friendship relation. If, however, they conclude that suggestions for change are motivated by self- rather than other interest and that these changes will unnecessarily interfere with the workflow coworkers they will respond negatively by disengaging from their friendship relation.

Impression- management theory argues that people tend to create and maintain positive perceptions of themselves in the eyes of others (Schneider, 1981; Schlenker, 1980; Tedeschi, 1981). Thus, employees should be motivated to avoid that their suggestions for change are perceived as conflicting with their coworkers' interests. Indeed, studies have found that in times of organizational change managers proactively try to mitigate resistance to change by offering employees meaningful interpretations of change that lower the perceived threats that these employees associate with the proposed change and facilitate its implementation (Gioia & Chittipeddi, 1991; Labianca, Gray, & Brass, 2000; Maitlis & Lawrence, 2007; Sonenshein, 2010). These managers offer employees a "preferred redefinition of organizational reality" (Gioia & Chittipeddi, 1991: 442) to shift employees' interpretations of the organizational change. Similar, Bolino, Turnley, and Goodblood (2002) argued that employee voice facilitates shared meanings in organizations. Employees who want to promote the organization by changing it will need to create a sense of urgency by changing employees' perceptions of the status quo, followed by the creation of new meanings that elicits their support (cf., Kotter, 1996).

However, the opportunity to communicate different meanings that deal with employees individual concerns is seriously limited by employees' various attitudes and perceptions of the advocated organizational change (Sonenshein, 2010). For example, sometimes it might be necessary to appeal to employees who welcome changing the status quo and are excited about new direction for the organization (Kelman, 2005) and sometimes to employees whose fear of uncertainty needs to be reduced by stating that little will change (Miller, Johnson, & Grau, 1994). Despite the prosocial intentions of employee voice and its potential benefits for coworkers employees might have to play different roles at a time if they want to promote the organization. Thus, rather then providing unambiguous and clear interpretations of the (in)significance of change (Kotter, 1996) promoting organizational change requires employees to intentionally be ambiguous about its meaning (Sonenshein, 2010). This means that employees need to get involved in many interactions in a way that allows them to entertain multiple meanings of a change while being perceived as agreeing on one meaning (e.g., "unified diversity"; Eisenberg, 1984)

Of course, maintaining different interpretations of one's change projects will not work for just anyone. The play with different meanings must remain hidden from peers even if it is only for the sake of promoting the organization and its members. Thus, a key question for understanding the interpersonal responses to employee voice is to understand the conditions that promote or constrain opportunities to create different and sometimes even conflicting interpretations while appearing coherent. In the following we argue that these opportunities are constrained or facilitated by structural holes in the network.

Voice and social networks

A focal employee's opportunity to create favorable interpretations of his or her change initiatives should vary as a function of coworkers' ability to learn about the interactions of this focal employee with other coworkers. Employees should be more likely to succeed in constructing different and even conflicting interpretations about their change efforts if coworkers have limited ability to uncover the many meanings of change that an employee entertains.

A central idea of social networks is that the ability to learn about other network members' actions is constrained or facilitated through the structure of the relationships in the network (Coleman, 1988, 1990). People in a network learn about their interaction partners directly, based on their own interactions with them, or indirectly via third parties (e.g., Burt, 2005). In dense networks where everyone is connected to everyone (i.e. no structural holes) nobody can escape the awareness of other network members (Coleman, 1988). Therefore, it is unlikely that employees in in dense networks succeed in creating different interpretation of organizational change without appearing incoherent.

The reverse, however, should also hold. Networks with many structural holes, the missing links between people, provide employees with the opportunity to display different beliefs and identities to each contact at the other side of the structural hole (Burt, 2001). Persons who connect otherwise disconnected people in a network benefit from their interaction partners' lack of associations with each other and can create and maintain a number of not always compatible interpretations of their change projects. For example, Padgett and Ansell's (1993) investigation of the Medici family in renaissance Florence showed that the fact that Medici were involved in interactions with otherwise disconnected families provided them with "Rorschach blot identities, with all alters constructing their own distinctive attribution of the identity of ego" (Padgett & Ansell, 1993: p. 1263). The structural holes between people or groups of people do not mean that they are unaware of each other but they are focused on their own activities and do not pay much attention to the activities of each other (Burt, 2001). Thus, we propose that structural holes between a coworker and an employee's friends will qualify the interpersonal responses of this coworker.

Hypothesis 1: There will be a negative association between ego's employee voice and alter's friendship relation strength to ego if alter is separated from ego's friends through few structural holes and a positive association if alter is separated from ego's friends through many structural holes.

Methods

Sites and Participants

Respondents were 121 employees from eight organizations in the health care sector. Organizations employed on average 16.7 employees ($SD = 5.85$). The smallest organization counted ten employees and the largest one 26. One organization was a veterinarian, one a physiotherapist, one a practice for alternative healing methods (e.g., acupuncture), two were pharmacists, and the remaining three were dental practices. Except for the two pharmacies all organizations were group practices. These group practices were owned by one or two of the doctors and additional doctors could join the practice in return for a certain percentage of their income and use facilities, have assistants support them, and treat their own stock of patients. Each pharmacy employed two pharmacists. The two pharmacists are required in the Netherlands because pharmacists mutually control the quality of their products (i.e. medicaments). Most organizations also employed one practice manager. Practice managers usually hold a college degree in business administration and involved in tasks as billing and ordering supply. In all but two organizations the practice manager had an assistant; usually one of the medical/ pharmaceutical secretaries. The third group of employees was medical/ pharmaceutical secretaries of which some had an extra education (e.g. hygienist, prevention employee) to perform simple complementary treatments. This group also had the lowest education.

Design

We approached organizations with the request to participate in a research project called "Wellbeing, work experience, and stress". In return for their participation we provided reports on employee well-being and stress level. We guaranteed respondents confidentiality of their data through information letters that we sent prior to data collection. In one case we provided an official written statement because a respondent had requested it. Supervisors rated employees' performance. In particular, for each time point we asked the person within each organization that performs the yearly evaluations talks to rate their employees. These were either the owner of the practice or the practice

manager. The supervisor ratings that we received were neither considered a formal assessment of employees nor were the ratings reported to employees. This decision was also communicated to employees. This step helped to improve data validity and response rate because employees might have been concerned that the results of the survey could have personnel consequences.

We collected network data on two different time points by means of questionnaires that were sent to all 121 employees (78% women). All questionnaires were administered in Dutch. The time lap between the two time points was four month. Friendship relations seem to be relatively stable and voicing an issue is unlikely to change them within a day. Hence, we think that this time interval is large enough to allow some change in the network to occur. The average age was 37.3 years ($SD = 10.9$) and the average tenure was 5.4 years ($SD = 5.7$). Response rates were 90 and 85 percent at time point one and two, respectively. We assessed employee voice and in-role performance by sending separate questionnaires to supervisors (i.e. the person within the organization that also conducted the mandatory yearly job evaluation talks). Supervisor response rate was 100 percent for all two time points. Thus, for each time point we obtained data on networks and voice and in role-performance from different source.

Individual variables

Voice. For each time point we asked the person within each organization that performs the yearly evaluations talks to rate their employees' voice behavior with six items from Van Dyne and LePine's (1998) scale. Example items were: (This employee) "develops and makes recommendations concerning issues that affect this work group", "communicates his/her opinions about work issues to others in this group even if his/her opinion is different and others in the group disagree with him/her", and "speaks up in this group with ideas for new projects or changes in procedures." Answers were provided on a 5-point Likert scale (1 = 'never', 5 = 'always') and were averaged. Cronbach's alphas for the two time points were .92 and .94.

Controls. We also collected data on tenure, gender, and organizational rank. *Tenure* and *gender* were self-reports. We inferred organizational rank from organization charts and function descriptions

from organizational documents. We coded ranks into high (doctors and practice managers) and low (doctor's assistants and help desk employees).

Network Data

Friendship strength. At both time points respondents were presented a randomly sorted list with the names of all employees in their organization and asked for each of their coworkers to rate how much they agree with the statement that they were good friends. Friends were defined as "people with who you like to spend your free time, people you have been with most often for informal social activities, such as visiting each other's homes, attending concerts or other public performances " (Mehra, Kilduff, and Brass, 2001). Response categories reached from "1" (disagree very much) to "5" (agree very much). In total we obtained eight matrices (for each organization) consisting of 1580 friendship ratings in total at time point one and 1700 ratings at time point two. We then transposed the matrix of friendship ratings to obtain alters' friendship ratings of ego.

Dyadic Redundancy. We used UCINET to measure the structural holes in the friendship network between a focal employee's friends measured as the inverse of the dyadic redundancy of a focal employee's relation with each of her or his coworkers (Burt, 1992). The dyadic redundancy measure calculates, for each focal employee's friends in the network to how many other actors they are tied that are also tied to the focal employee. To obtain a measure of alter's missing links to friends of ego we used the inverse of dyadic redundancy. Instead of dichotomizing and symmetrizing our data and loosing data we relied on a measure of dyadic redundancy that considered the directed strength between all actors in the network. The measure of network brokerage has a minimum of zero (no brokerage) and a maximum of 1 (maximum brokerage).

Controls. Respectively, we included the past relationship strength of alter because in order to measure change in relationship strength it is necessary to control for the past state of the depended variable (Cohen, Cohen, Aiken, & West, 2003). According to homophily principles employees should feel attracted to similar others (Ibarra, 1992; McPherson, Smith-Lovin, & Cook, 2001; Pfeffer, 1982). Hence, we included measures of tenure and gender similarity because both might form alternative

reasons for friendship strength. We also controlled for interpersonal helping and advice giving because both might be used as impression management strategy of ego to elicit alter' friendship strength for ego (Bowler & Brass, 2006). Reciprocity has been hypothesized to be a correlate of friendship strength (Granovetter, 1973; Krackhardt, 1992). Therefore we also controlled for ego's past felt friendship strength for alter. Moreover, we controlled for tenure, gender, and organizational rank because they form alternative sources of status expectations and might therefore affect the prominence of employees in their organizations (Brass, 1984; Ridgeway, 1991). We included ego's past network centrality because popular persons in a network might exert the tendency to attract more ties (see in-degree popularity effect, Ripley & Snijders, 2011, Jackson, 2008). Finally, we included dummys to control for differences between organizations.

Analytical Strategy

This study has as outcome the change in friendship strength and hindrance strength as rated by an employee for all her or his coworkers. The strength of the relationship was measured on a scale from one (i.e. focal employees disagree very much that alter is their friend / a hindrance) to five (i.e. focal employees agree very much that alter is their friend / a hindrance). We used a dyadic model to test Hypotheses 1 and 2. Dyadic models are the preferred models for testing hypothesis about the formation of network ties in organizational research (Mizruchi & Marquis, 2006) (e.g. Gulati, 1995, Podolny, 1994; Sorenson & Stuart, 2001) because they have as outcome the relationship between two actors (ego and alter) in a network. In our dyadic model we define alter as the employee rating the relationship strength to ego and ego as the employee who engages in employee voice behaviors.

OLS has the potential to produce different and potentially misleading results due to the numerical values assigned to the different ordinal response levels because it assumes that the distances between adjacent categories are known. In the case of friendship strength and hindrance strength we do not know if the difference between two adjacent categories is the same for all categories as in ration or interval scaled variables. Thus, OLS was inappropriate to test hypotheses about the dependent variables in this study (Liu & Agresti, 2005). An ordered probit model makes use of the ordered nature

of the response levels without having to assume that the distances between categories are known. In an ordered probit regression, the ordered log odds of falling in a higher category of the dependent variable are estimated as a linear function of a set of independent variables and a set of cut points. Thus, we tested the association of the predictors with change in friendship strength using a dyadic ordered probit model.

Moreover, for the dependent variable we used multiple assessments of the relationship strength with the same focal person. Accordingly, alters' observations were nested within ego (Snijders & Boskers, 1999). This violates assumptions of non-independence of residuals and might artificially deflate standard errors. We therefore used the cluster option in STATA 9.0 (StataCorp, 2005) to get robust estimates of standard errors (Rogers, 1993).

Results

Means, correlations, and correlations are reported in Table 1. Due to missing data we maintained 1300 (41%) complete dyads of a total population of 3138 dyads for the tests of Hypotheses 1. The results of the hypothesis test are reported in Table 2. We first tested a control variables model only (Model 1). Interpersonal helping and advice giving ($\beta = .11$; $p < .05$) as well as the strength of the past friendship relationship ($\beta = .65$; $p < .001$) and ego's past friendship strength for alter ($\beta = .16$, $p < .001$) significantly affected changes in friendship strength. Central employees also attracted stronger friendship relations ($\beta = .11$, $p < .05$). Model 2 included the main effects of ego's employee voice and structural holes between alter and ego's alters. Only ego's employee voice was marginally negatively correlated with change in friendship strength. Finally, in Model 3 we tested the proposed interaction. The interaction is plotted in Figure 1. The interaction was significant ($\beta = -.70$, $p < .05$). We explored the form of the interaction by plotting the simple slopes of employee voice on friendship strength at one standard deviation below and above the moderator (i.e. structural holes between alter and ego's friends) (Figure 1). Employee voice had a positive association with the log odds for change in friendship strength at high levels of the moderator (one standard deviation above the mean) ($\beta = 1.22$, $p < .05$) but a negative association for low levels of the moderator (one standard deviation below the

mean) (β = -.18, $p < .05$). The difference between the simple slope was also significant ($p < .01$).

Thus, Hypothesis 1 was supported.

Table 1 Means, standard deviations, and intercorrelations among study variables

Variables	Mean	SD	1	2	3	4
1. Friendship strength T1	2.97	1.19				
2. Advice and helping T1	3.21	1.19	.41***			
3. Ego's friendship strenght for alter T1	2.97	1.19	.35***	.25***		
4. Ego centrality T1 (in-degree)	0.27	0.16	.38***	.33***	.13***	
5. Gender ego (1 = woman; 2 = man)	1.22	0.42	.01	.06*	-.02	.02
6. Tenure ego	5.35	5.66	.02	.05*	-.02	.10***
7. Rank ego	0.32	0.47	.05	.23***	-.10***	.17***
8. Gender homophily	0.49	0.49	-.01	-.03	-.01	-.12***
9. Tenure homophily	4.65	5.27	.10***	.07**	.10***	.11***
10. Employee voice ego T1	2.98	1.00	.11***	.26***	.06*	.29***
11. Dyadic redundancy T1	0.55	0.08	.14***	-.01	-.04	.04
12. Friendship strength T2	2.73	1.26	.52***	.32***	.30***	.30***

* p<.05 . **p<.01 . ***p<.001

Table 1 (continued) Means, standard deviations, and intercorrelations among study variables

5	6	7	8	9	10	11
.18***						
.37***	.06**					
-.30***	-.05	-.32***				
.03	-.46***	-.02	.04			
.18***	.05	.42***	-.12***	-.06		
-.05	.04	.10***	-.01	.18***	-.01	
.04	-.05	.00	-.05	-.08**	.13***	.03

Table 2 Results of ordered probit regression on alter's friendship strength for ego

| Variables	Alter's friendship strength for ego T2		
	Model 1	Model 2	Model 3
Organization 1	2.09***	2.11***	2.09***
Organization 2	2.39***	2.54***	2.55***
Organization 3	2.53***	2.65***	2.65***
Organization 4	2.78***	2.86***	2.86***
Organization 5	1.91***	2.03***	2.00***
Organization 6	2.88***	2.90***	2.94***
Organization 7	2.37***	2.42***	2.43***
Friendship strength T1	.65***	.62***	.62**
Advice and helping T1	.11*	.13**	.13*
Ego's friendship strength for alter T1	.16***	.17***	.17***
Ego centrality T1 (in-degree)	.11*	.14**	.14**
Gender ego (1 = woman; 2 = man)	-.07	-.06	-.08
Tenure ego	.01	-.01	-.01
Rank ego	.00	.05	.06
Gender homophily	-.07	-.06	-.06
Tenure homophily	-.02	-.03	-.03
Employee voice ego T1		-.11+	.52+
Dyadic redundancy T1		.09*	.39**
Employee voice ego T1 X Dyadic redundancy T1			-.70*
AIC		4.03	3.91*
Pseudo R2	.25	.26	.27

* p<.05 . **p<.01 . ***p<.001
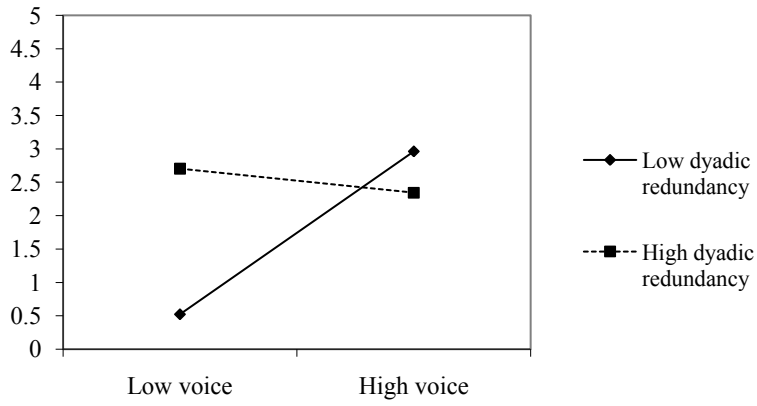
Figure 1 Effect of the Interaction between employee voice and dyadic redundancy on friendship strength.

Discussion

Research on employee voice has created a "black box" around the question how employee voice affects interpersonal relationships. As previous research has revealed the various benefits of strong friendship relations for organizations this study sets out to deepen our understanding of the possible reasons for their change. The results of our study support our basic premise that employee voice has important consequences for work relations. In a longitudinal sample (i.e., two time points) of 1300 relationships between 121 employees from eight organizations in the health care sector we found that a focal employee's voice was negatively related to change in friendship strength if a coworker had many friends in common with a focal employee (i.e. few structural holes) but positively if they had few common friends (i.e. many structural holes).

Theoretical Implications

Although claims have been made about the interpersonal consequences of voice these claims have not been tested empirically before. Our study addresses this question by investigating the contingent influence of employee voice on the strength of interpersonal relations. In particular, this study highlights the benefits of considering a social network perspective to understand *when* employee voice will impair of benefit interpersonal relations at work. Dyadic measures of friendship relations, the dependent variable of interest of this study, are the building block of networks. However, the idea of a network implies more than one link between two persons. As Brass (forthcoming) notes "the added value of the network perspective, the unique contribution, is that it goes beyond the dyad and provides a way of considering the structural arrangement of many nodes" (p. 5). This study shows that the structure of relations in which the relation between two employees is embedded affects how this relationship is influenced by voice. The results of this study support our assumption that structural holes, the missing links between an employee's friends, provide opportunities for employees to avoid the negative consequences of employee voice and to create stronger ties to them. This finding is important because it shows that the benefits that lay in the brokerage of two otherwise unconnected

people is not limited to performance benefits or the to "get ahead" but also extend to the quality of relationships. Thus our study shows the usefulness of social network concepts for the study of voice and more generally encourages the use of social networks for the investigation of organizational behaviors.

But just as it is true that researchers only now start to discover the benefits of social network theory for the investigation of employee voice the reverse is true as well. Our study speaks to earlier speculations that a focus on organizational citizenship behaviors like employee voice forms a promising direction for researchers interested in studying network change (Brass, forthcoming). Employee voice is a salient work behavior that "cuts the silence" and is directed at changing the organization. Therefore, it has the potential to stir up interpersonal ties in organizations. Other organizational behaviors that should be important for changes in the quality of interpersonal relations are interpersonal helping and harming. Both have been shown to be the outcome of networks but the next logical step is to investigate their effects on network change (Bowler & Brass, 2006; Venkatarmani & Dalal, 2007). The indirect relations between one's contacts, the moderator of our study, might also be an important contingency for these organizational behaviors. Interpersonally helping is affiliative and should strengthen the relationship with the receiver of help (Van Dyne & LePine, 1998) but this effect might be even stronger in cohesive subgroups where some actors in a network are densely connected and where interpersonal helping is likely to emerge as group norm (Coleman, 1990). However, harming one member of a dense group might cause other group members to collectively disengage from the source of the harm. But harming a person when this person is disconnected from other members in the network might impair the creation of some negative reputation for the transgressor who engages in the harmful behavior.

Our study also shows that voice can harm interpersonal relations and therefore decrease group cohesion and potentially also trust. Thus, an important question is which organizations benefit most from their employees' attempts to improve the organization. This points to possible cross-level effects between employee voice and group structure. For example, future research might explore whether

organizations with low cohesion and therefore many structural holes benefit most from their employees' suggestions for change whereas this effect might be reversed for highly cohesive organizations. Also, team psychological safety, the shared belief of group members that one will not be embarrassed or punished for speaking up (Edmondson, 1999), might mitigate the potentially interpersonal consequences of employee voice.

We also find that the benefits of brokering unconnected persons vary with employee voice. Its benefits were highest when employee voice was high but when employee voice was low brokerage had no influence on friendship strength. This finding is in line with a study by Brass and Burkhardt (1993). They found that the influence of brokerage on power was strongest when employees used behaviors that were meant to accrue power. This finding further urges researchers to investigate the possibility that exploiting the opportunities that lay in structural holes might require some intended employee behaviors.

Moreover, scholars have realized the need for managers to sometimes create ambivalent meanings of organizational change to promote its implementation (Sonenshein, 2010). Our study hints to the possibility that the success of this strategy will depend on their position in the network and particularly their ability to connect otherwise unconnected employees. Thus, our study might also have interesting implications for research on organizational change.

Limitations and Directions for Future Research

We did not directly measure mechanisms linking the interaction between employee voice and network brokerage to voice. Though this is a common limitation of research on social networks further research is needed. For example, future research might include measures of impression management (e.g., Bolino, 1999) to more firmly investigate the processes underlying our findings.

Despite the longitudinal design of this study conclusions about causality cannot be made. In fact, Bryk and Raudenbush (1987) warn that measures between two time points can be artificially correlated due to some measurement error and recommend the use of at least three measurement points. However, in the case of moderation like in our study these factors should also introduce more

measurement error variance and therefore, if at all, make it more difficult to detect interaction effects (McClelland & Judd, 1993). Moreover, longitudinal network studies are commonly found in inter-organizational studies because researcher can sometimes use archival data but longitudinal network data in the study of intra-organizational networks is rare. Thus, we think that our study provides a reasonable of our hypothesis but future research might explore the findings of this study in experiments to more confidently establish causality. For example, Cook and Emerson (1978) used laboratory studies to investigate the power consequences of brokering structural holes in negotiation tasks. These experimental set-ups might be useful for investigating the contingent effect of organizational behaviors on the quality of interpersonal relations.

Managerial Implications

Our study also has implications for managers. They benefit from employees voice because it entails ideas and suggestions for how to improve the organization. Our study shows that another possible benefit of employee voice is its potential to strengthen interpersonal relations at work and thus increase cohesion, information sharing, and trust among group members. A possible caveat however is that employee voice could just as well harm interpersonal relations and thus harm the well being of the organization. People generally seem to have difficulties to recognize structural holes in networks. Thus, it might be difficult for managers to anticipate the potential hazards associated with employees' suggestions for change.

However, managers can consider delegating those employees that voice for change into positions that include boundary spanning behaviors. These employees should be more likely to reach out to employees that are not related to each other. For example, employees who show their concern and motivation to promote the organization through changing its workflow could be delegated to act as change agents responsible for change implementation in different departments of a multi-departmental organization.

Conclusion

Until now the interpersonal consequences of employee voice have not been empirically investigated but it is likewise true that social network scholars have not paid attention to the importance of employee voice for changes in interpersonal ties. Our results confirm the overarching logic of this study that the consequences of employee voice depend on opportunities that are embedded in social networks. We hope that this study can further help to set social network theory on the agenda of researchers interested in employee voice and employee voice on the agenda of scholars interested in network change.

CHAPTER 4: TASK NETWORK CENTRALIZATION, NATIONALITY DIVERSITY, AND TEAM PERFORMANCE

Teams are ubiquitous and organizations rely heavily on their performance for accomplishing organizational goals (Gerard, 1995). Despite the vast literature on the antecedents of team performance (for reviews, see Ilgen et al., 2005; Kozlowski & Bell, 2003; Stewart, 2006) researchers have only recently started to focus on the structure of patterned task interactions between team members. This upsurge in network studies has lead to a body of important findings but questions about the precise network configurations that enhance team performance remain a matter of debate (Balkundi & Harrison, 2006; Cummings & Cross, 2003; Sparrowe, Liden, Wayne, & Kramer, 2001).

Team network structure has been most often examined in terms of its density and there is mounting evidence that teams profit from high degrees of interconnectedness of its members (Balkundi & Harrison, 2006; Brass, forthcoming). In the current study, we complement the focus on network density with what arguably is the other, but much less researched core team network characteristic – network centralization (Freeman, 1979; Wasserman & Faust, 1994). Task network centralization measures the degree to which the workflow between team members is in the hands of one or a few persons. This study will test whether network centralization affects team performance. In particular, we test a curvilinear relationship of team task network structure with team performance. We expect that performance will be highest at moderate levels of performance and lowest at low and high levels. Thus a first contribution of this study is to test a novel argument about the association between team network structure and team performance.

However, social network research typically ignores the role of individual attributes in these networks (Brass, forthcoming, Kilduff & Brass, 2010; Kilduff & Tsai, 2003; Mehra, Kilduff, & Brass, 2001), which begs the question how the effects of team networks might depend on team members' individual attributes (Zhou, Shin, Brass, Choi, & Zhang, 2009). Teams are a way of bringing together and leveraging the potentially varied skills and perspectives of diverse members (see Kozlowski & Bell, 2003). But there is also persuasive evidence to suggest that teams composed of diverse

individuals can suffer from heightened conflict and a lack of coordination, which tend to detract from team performance (e.g., Williams & O'Reilly, 1998; Bell, 2007). The central message of this study is that a proper match between network centralization and diversity is critical for team performance. Task network centralization should be more important in more nationality diverse teams because knowledge and experience is more likely to vary among its members (Cox & Blake, 1991; Hofstede, 2001; O'Reilly et al., 1998) and task network centralization should provide an important mean to coordinate the exchange and integration of these differences (Rosenthal, 1997; Rulke & Galaskiewiewicz, 2000). Thus, a second contribution of this study is to test the interaction of network centralization and nationality diversity on team performance.

Theoretical Background and Hypotheses

The social network perspective on team performance focuses on the structure of interactions among the members of a team (Borgatti & Foster, 2003; Brass, Galaskiewicz, Greve, & Tsai, 2004). Networks have important consequences for team performance because they constrain or facilitate the flow of resources between team members (e.g., Reagans & Zuckerman, 2001; Sparrowe, Liden, Wayne, & Kramer, 2001). Density and centralization are fundamental properties of network structure (Wasserman & Faust, 1994). The former informs us about the average interactions that team members entertain and the latter about the differences of interactions across team members and in particular the extent to which these interactions are concentrated in a few individuals (Freeman, 1979). Centralization and density are different ways of looking at team network structure and both should be simultaneously considered when predicting the consequences of network structure for team outcomes (Wasserman & Faust, 1994: 182).

Density in teams is important for team performance because it improves information sharing and therefore decision-making quality (Sparrowe, Liden, Wayne, & Kramer, 2001). Indeed, a recent meta-analysis by Balkundi and Harrison (2006) has found some, albeit not strong ($\rho = .15$), support for the performance relevance of task network density. But teams can vary considerably in the degree to

which different team members are involved in interactions (Eisenhardt & Bourgeois, 1988; Finkelstein, 1992; Hambrick, 1981; Pitcher & Smith, 2001). We argue that these differences have profound consequences for team performance. Thus, in this study we focus on centralization because of its complex and yet under-researched consequences for the task performance of teams. Importantly, we will argue that network centralization provides a mean of leveraging the potential of (nationality) diverse teams.

Task network centralization and team performance

Although the effects of network centralization have gone largely unexamined in contemporary network research on team performance (but see Sparrowe et al., 2001), they were carefully studied in a series of experiments conducted more than half a century ago at MIT (Shaw, 1964). The basic question behind the MIT studies had to do with how communication networks in small groups could be optimally coordinated for performance. One of the key findings to emerge from these experiments was that centralized structures (such as the "star" Figure 1a) outperformed decentralized structures (such as the "circle" Figure 1b) (Shaw, 1964), even though it could be shown mathematically (Leavitt, 1951) that more decentralized structures had a shorter solution time. However, achieving the mathematically optimal solution would have required individuals to execute a series of complex sequence of information trades. It seemed that centralization of task network structure provided team members with an organization that was easy to understand and easy to stick to but which properties exactly caused this performance advantage remained unclear and the results of the MIT experiments were deemed "*contradictory as well as inconclusive*" (Burgess, 1968). This was probably due to considerable confusion about what precisely centrality was.
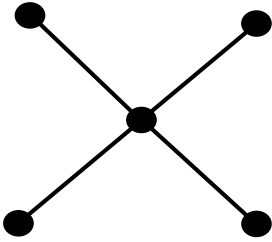
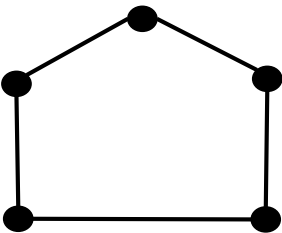**Figure 1a** The "star" as example of centralized task network structure

Figure 1b The "circle" as example of de-centralized task network structure

A first thorough conceptualization of different centrality measures was offered in the seminal work of Freeman (1979). Based on this framework Freeman, Roeder, and Mulholland (1980) re-examined the MIT studies and found that differences in team members' betweenness centrality, the potential to control resource flow in a network, was the most relevant factor in explaining many of the outcomes of these experiments. Betweenness centrality measure the extent to which team members dominate the interactions in the network because they fall between the shortest paths connecting any two other members of the network (Freeman, 1979). When the ties represent (as they do in our analysis) task-related interactions among team members, betweenness centralization can be thought of as an index of the potential for coordination (Freeman, 1979). In highly (betweenness) centralized network, a few well-connected individuals control the flow of work among team members because they occupy critical junctures through which work relevant resources have to pass before others can process them. Betweenness centrality gives central team members the opportunity to transform or

selectively pass on work related resources and to anticipate developments in the work process (Burt, 1992). As a consequence of their control over information these central actors become more influential in the network (Brass, 1981, 1984; Bunderson, 1992; Emerson, 1962; Hambrick, 1981; Salancik & Pfeffer, 1977). Indeed, in the MIT studies individuals high in betweenness centrality were more often identified as leaders, collected more information, and passed on more solutions of task problems (Freeman, 1979).

Centralized task network should facilitate team performance because information and knowledge is "sticky" and does not easily flow between actors (Burt, 2007; Hansen, 1999). Thus, distinct tacit knowledge is at risk of being ignored or misunderstood when it flows through the network. This risk increases with the length of the paths that information travels. However, in centralized task networks central actors optimize the workflow because they decrease the number of redundant work interactions and increase the chance that information and other work relevant resources are understood, processed, and integrated. Thus, the performance advantage of task network centralization is the control over and coordination of the workflow that directs efforts and facilitates the exchange and integration of work.

Interestingly, the laboratory-based work at the MIT also found that teams with centralized networks tend to outperform teams with dense networks. The lack of communication restrictions in dense networks created "an open field with almost too many opportunities… each [dense network] has the difficult job of developing its own restrictions— deciding that certain available channels will not be used" (Guetzkow & Simon, 1955: 239). Thus, densely connected networks tended to perform worse than centralized networks because dense networks posed greater coordinative/organizational challenges for their members. Notably, dense teams increased their performance over time but only because they centralized their communication.

Centralized task networks, however, may not be an unmitigated boon for teams. For one thing, excessive workflow centralization can create demands that overwhelm the information-processing capabilities of the central individual(s). As a consequence central actors might willingly or unwillingly

distort or hoard information (Burt, 1992). As central decision makers make suboptimal decisions due to information and task overload, the performance of the team as a whole suffers. This problem is further exacerbated through the lack of non-redundant paths between team members in highly centralized teams, which decreases the opportunities for team members to check decision and information. This speaks to the decreasing performance of high levels of task centralization. Another reason that too much centralization may have a negative effect on performance is that peripheral team members can come to feel excluded from the decision-making process and frustrated by their dependence on central individuals for information and advice. The researchers of the MIT studies noted that peripheral team members start to withhold information from central members, leading to a decline in team performance (Shaw, 1964). The negative effects of exclusion on cooperation are also well documented in social psychology. People who do not receive recognition for their inputs will try to control the situation (e.g. withhold inputs), provoke, or even engage in antisocial behaviors (Wiliams, 2007). In a similar vein it has been argued that people who experience little task autonomy lack intrinsic motivation and reduce their task efforts (Hackman & Oldham, 1976).

Building on this line of reasoning, we argue that the relationship between network centralization and team performance is curvilinear: Team performance increases with greater centralization up to a point when the benefits of task coordination outweigh the disadvantages of exclusion and information-processing impairment. Beyond this point team performance is likely to suffer. More effective teams should be those with a moderate degree of centralization in their network structure.

Hypothesis 1: Team performance is higher at moderate levels of network centralization than at low and high levels of centralization.

Task Network Centralization and Team Performance of Nationality Diverse Teams

The literature on the antecedents of team performance has, at least until recently, tended to ignore the possible effects of the structure of a team's task network. But it is equally true that the literature on team networks has tended to ignore the possibility that the effects of networks on teams

may be contingent on the individual attributes of its members. Perhaps this mutual neglect stems from the fact that these perspectives are rooted in the very different intellectual lineages of psychology and structural sociology. Whatever the reasons, the two perspectives combined may provide a clearer understanding of team performance. Different knowledge and perspectives are more varied among team members in diverse teams than in homogeneous team. A challenge for diverse team is to integrate this information (van Knippenberg, de Dreu, & Homan, 2004). Network centralization is a means of achieving this.

Nationality is relevant in work teams because it is a super-ordinate determinant of one's identity that is engrained from birth (Earley & Mosakowski, 2000; Gibson & Gibbs, 2006; Hofstede, 2001). This means that the generic effects of diversity will be most prominent when team members hold different nationalities (Stahl, Maznevski, Voigt, & Jonsen, 2010). Individuals from different countries bring different ideas and ways of thinking to a team (e.g., Kirkman & Shapiro, 1997; Laurent, 1986) and how to best prioritize and interpret the team's problems (Earley, 2006). From a sensemaking perspective, variety within a team is an important prerequisite for registering the variety in a team's environment (Weick, 1979). Thus, nationality diversity can be a perquisite for team members' efforts to uncover their differences.   The varied perspectives that the nationals of different countries bring to a team can, of course, also be an informational asset that allows teams to make better decisions (van Knippenberg & Schippers, 2007). Differences in mental models, modes of perception, and approaches to problems are among the factors associated with national diversity and creativity (Stahl et al., 2010). These differences challenge team member´s beliefs how to approach the task at hand, stimulate the exchange of diverse knowledge and perspectives, the processing of this information and perspectives, giving feedback, and discussion and implementation of its implications (van Knippenberg et al., 2004). This increases diverse team members' ability to make better decisions and to accomplish their tasks. But this potential may remain untapped if the team does not evolve an efficient network structure to exchange and integrate the diverse knowledge and experiences of the team's members. We argued above that the relation between task network centralization and team performance has an inverted u-

shape. Here we argue that the optimal degree of network centralization required for high task performance is *higher* in teams comprised of diverse individuals than in relatively homogenous teams.

Despite the potential benefits of nationality diversity it might also have disruptive consequences for team performance (van Knippenberg, de Dreu, & Homan, 2004). Information, knowledge, and experiences in nationality diverse teams are more "sticky" (i.e. do not easily move from one person to another) because they are codified into the symbols and artifacts of the different national cultures of the senders and receivers (cf. von Hippel, 1994). Moreover, in groups with nonoverlapping information, confirmative pressures or the mere presence of other group members may suppress the retrieval of the knowledge and decrease group performance (Janis 1982, Markus 1978). Homogeneity, on the other hand, is a coordinating mechanism itself. In homogeneous teams task coordination is less relevant because team members´ information is more homogeneous and therefore easily understood and more readily processed by its members. For example, Stasser and colleagues (Stasser et al. 1989, Stasser and Titus 1985, 1987) found that broadly distributed or shared information is more likely to be retrieved by the group than unshared information,

Centralized task structures provide an efficient coordinative structure that helps mitigate the conflict and misunderstanding that is especially likely to emerge in diverse teams because it removes redundant work interactions and decreases the paths lengths in the network; removing the likelihood that individual group members block the flow of work. Moreover, as central team members emerge as coordinators of work resources they should become accustomed to the differences between team members and more capable of communicating work relevant information in the team.

These arguments suggest that the degree of centralization required for successful team performance is likely to be higher in diverse teams than in homogenous ones. Of course, we are not the first to investigate how networks and diversity affect team performance. For example, research suggests that network structure (i.e., density) mediates the diversity-performance relationship (Reagans & Zuckerman, 2001; Reagans, Zuckerman, & McEvily, 2004). But overall the linkage of diversity, density, and performance seems to be weak (Jackson, Joshi, & Erhardt, 2003; Mannix &

Neale, 2005; Stahl, Maznevski, Voigt, & Jonsen, 2010) and there have been calls to search for contextual factors that interact with diversity to predict team outcomes (Bell, 2007; Joshi & Roh, 2009; van Knippenberg et al., 2004; Van Knippenberg & Schippers, 2007). In this study we propose that task network centralization is such a context and that nationality diversity and task network centralization interact to affect performance.

Hypothesis 2: The inverted u-shaped relationship of team network centralization with team performance is moderated by the team's nationality diversity such that the highest level of performance is reached at higher centralization for more diverse teams.

Methods

Sample and Procedures

Respondents were 461 business students from a major Dutch business school who were enrolled in an organization theory and organizational behavior course over a period of eleven weeks. Students attended one lecture each week. Besides lectures students had to attend learning communities. In these learning communities tutors explained the material of the courses and provided guidance with the group work. During the first week of the course, students were formed into five-person work groups. Each group was assigned to one of eight learning communities. Because six students dropped out of the groups after the groups had formed (to, for example, pursue an internship) the average group size was 4.98 ($SD = 0.30$). The task of the work groups was to analyze a company drawing on the theories taught in the course. Each group had to select a local company that was at least four years old and had more than 20 employees. The groups were graded on the basis of a final report that provided a comprehensive description of the company (its mission, its objectives, its competitive environment, etc.) and core challenges and opportunities facing the company in the future. The reports were turned in for grading in the final (11th) week of the course. The average age of the respondents was 21. Men comprised 57 percent of the sample. The average length of affiliation with the university was 2 years. Response rate for the questionnaire was 95 percent.

Measures

Team performance. Each tutor rated the final case study report of the teams in their learning communities. All tutors received grading schemes from the course instructors to ensure standardization of the grading procedure. The dimensions on which the final case study reports had to be graded included, for example, description of the organization, environmental analysis, theoretical foundation, method, and accuracy of conclusion. Grades could range from 1 (bad) to 10 (excellent). The average grade was 7.29 ($SD = 1.17$).

Network centralization. We collected network data in week 5. The procedure we used for collecting network data was modeled after Brass (1981). Respondents were presented a list of all names of their group members and asked to rate the extent to which they agreed with the statement that individual group members provided them with relevant inputs for their work ("Do not agree at all" (1); "Totally agree" (5)). We defined work inputs as "any materials, information, texts, etc., that you must acquire for your job on the team" (Brass, 1981). We computed team network centralization using the flow beweenness algorithm in UCINET IV (Borgatti et al., 1992; Freeman, Borgatti, & White, 1991). This measure is preferable to alternatives that assume that task related resources always flow on the shortest paths between individuals because it also considers the possibility that resources might travel longer paths (see Borgatti, 2005, for an extended discussion). Influential actors in a team's network are those who dominate the flow of work in the team; those persons that are often on possible paths between two people. The algorithm first computes a "flow betweenness" score (i.e., a structural measure of control) for each individual in a team's network. It then calculates the sum of the differences between the largest individual flow betweenness centrality score and the centrality scores for each of the other individuals in the work group. The sum of the observed differences in individual flow betweeness is then divided by the maximum possible sum of differences to normalize the score. Values can reach from 0 to 1.

Nationality diversity. Students selected their nationality in a list of all nationalities. The students in our sample had 60 different nationality backgrounds. Dutch students were the most numerous in our

sample (49.3%) followed by German (10%), Chinese (6.4%), and Bulgarian (4.5%). We used Blau's (1977) index to compute team diversity. Its computational formula is $1-\Sigma p_k^{\ 2}$, where p is the proportion of unit members in kth category. Values of Blau's index can range from zero to $(K-1)/K$. Its maximum occurs when all members of a team have different nationalities.

Controls. Teams can be demographically diverse in a number of different ways. Although the focus of our analysis was nationality, we controlled for gender diversity (computed using Blau's index of heterogeneity). For the tests of Hypothesis 1 and 2 we also controlled for workflow network density and the curvilinear effect of density because both have been discussed as structural antecedents of team performance (Oh, Chung, & Labianca, 2004). Density was calculated using UCINET IV (Borgatti et al., 1992). The measure calculates the proportion of ties as a function of the total number of possible ties in a team. Density can vary from a minimum of 0 to a maximum of 1. We also controlled for students' cognitive ability measured as the average grade of all courses a student had completed before this course. Cognitive ability, or prior student performance, might be an alternative explanation of group performance or network centralization.

Analysis

The performance of each team in our sample was based on the evaluation of one of eight raters. Because raters evaluated more than one group, team performance could be correlated within raters, which violates the OLS assumption of independence of observations and can generate invalid test statistics. We therefore used the cluster option in STATA 9.0 (StataCorp, 2005), which uses linearization/Huber/White/sandwich (robust) estimates of variance. These estimates of variance are robust to any correlation of team performance evaluations within raters because they estimate the variance-covariance matrix and assume covariance between ratings of the same rater but none across different raters (Rogers, 1993). To construct this matrix, the conventional variance-covariance matrix is weighted by using contributions (to the score function) of each *rater,* instead of each *grade* (see Glomb & Liao, 2003, for a similar application of this method). We centered all variables around the

grand mean prior to analysis to reduce the problem of multicollinearity (Aiken & West, 1991; Snijders & Bosker, 1999).

Results

Descriptive statistics and correlations among study variables are reported in Table 1. Our first hypothesis predicted a curvilinear (inverted U) relationship between network centralization and team performance. The standardized results of the clustered regression analysis are presented in Table 2. In the first step of the regression, we entered gender diversity and the linear and the squared effects of density, which turned out to have no significant effect on team performance. We then entered the linear and squared effects for task network centralization and nationality diversity. As shown in the Table 2, the coefficient for the squared term was significant and negative, $\beta = -.50$, $p < .05$, whereas the linear effect was also significant, $\beta = .51$, $p < .05$. The negative squared effect of centralization indicates that the curve has an inverted u-shaped curve. Thus, Hypothesis 1was supported. We followed standard procedures for testing our proposed curvilinear interaction hypothesis (Aiken & West, 1991: 64, Model 3a). For Hypothesis 2 to be supported the interaction effect of centralization and nationality diversity and the squared effect of centralization both have to be significant. Because curvilinear relations are sensitive to the influence of influence of outliers we also conducted an outlier analysis using Cook's distance scores to identify outliers that exerted a disproportional influence on the correlation between the interaction term and team performance. This analysis revealed that this was true for two cases and were therefore excluded from the analysis. Excluding these cases virtually did not change the relationship between the interaction term and team performance. As shown in Table 2, the interaction of network centralization and team diversity was significant, $\beta = .36$; $p < .05$, while the squared main effect of centralization was significant too, $\beta = -.56$; $p < .05$. We plotted the interaction in Figure 2. Teams with high levels of nationality heterogeneity (i.e., plus one standard deviation) required more network centralization than teams with low nationality heterogeneity (i.e., minus one standard deviation) to achieve maximum performance (Figure 2). Thus, Hypothesis 2 was fully supported.

Table 1 Means, standard deviations, and intercorrelations among study variables

	Variables	Mean	s.d.	1	2	3	4	5	6
1.	Gender diversity	0.27	0.21						
2.	Mean student performance	6.98	0.74	-.08					
6.	Task network centralization	8.15	6.91	.27*	-.08	-.04	.26*	-.12	
7.	Task network density	4.10	0.46	-.12	.10	.01	.01	.20	-.44***
8.	Nationality diversity	0.46	0.26	.15	-.14	.25*	.17	-.19	.03
9.	Team performance	7.29	1.17	-.06	.04	.10	.15	-.09	.02

N = 90

* $p < .05$

** $p < .01$

*** $p < .001$

Table 2 Standardized Results of Clustered Regression Analysis for Group Performance with Robust Standard Errors

Variables	*b*	R.S.E	*b*	R.S.E	*b*	R.S.E
Controls						
Gender diversity	-.01	.17	-.02	.17	-.02	.17
Workflow density	.47	1.64	.45	1.67	.71	1.56
Workflow density squared	-.48	1.66	-.41	1.70	-.65	1.57
Average student performance	.11	.08	.12	.09	.13	.09
Main effects						
Task network centralization			.52*	.20	.29†	.15
Task network centralization squared			-.52*	.15	-.58*	.18
Nationality diversity			-.01	.11	-.19	.16
Interaction effect						
Task network centralization X nationality diversity					.38*	.15
R^2	.01		.05		.07	
ΔR^2			.04		.02	

Note. $N = 90$, $k = 8$. Standardized regression coefficients are reported together with robust standard errors. We adjusted the variance and covariance matrices using the cluster option in STATA to account for interdependent errors within raters and heterogeneous errors across raters. Adjusted R^2 and F tests are invalid in regressions with the cluster option; therefore only R^2 and b are reported.

† $p < .10$
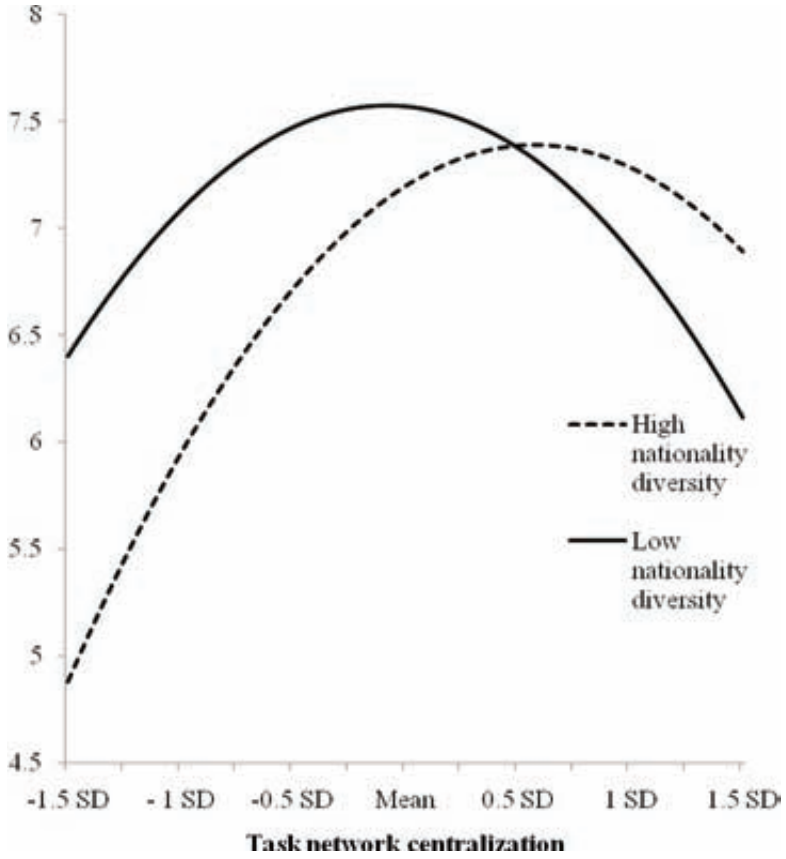* $p < .05$

Significance levels are two-tailed

Figure 2 Effect of Centralization and Nationality Heterogeneity on Team Performance

Discussion

The main finding of this study is that network centralization and nationality diversity interact to influence team performance. Controlling for the effects of network density we found that the degree to which the team's task network was centralized (i.e., control over the team's workflow was concentrated in a few members rather than being spread across all members) had an inverted-U relationship with team performance. Team performance suffered if there was too little or too much centralization and was maximized at moderate levels of centralization. This finding suggests that network centralization plays an important role in explaining team performance. Importantly. we also found that nationality diversity and task network centralization interacted to predict team performance. The degree of centralization required for optimal team performance in highly diverse teams was greater than that required in less diverse teams. Nationality diverse teams required well-adjusted levels of centralization to achieve high levels of performance. These findings highlight the benefits of integrating the network and the diversity perspective.

Implications for Theory and Research

The vast and growing literature on the antecedents of team performance (Ilgen et al., 2005; Kozlowski & Bell, 2003; Stewart, 2006) has rarely examined the role of task networks within the team (a state of affairs that is rapidly changing). Among the studies that have been published on the topic, the structural property of network density has been the one that has most often been examined. We focused here on the possible effects of a different network property (betweenness centralization), a measure of the potential for coordination within the team. We found that centralization had a complex, curvilinear relationship with team performance. This finding corroborates our claim that it is not only the average amount of interaction (i.e., density) in a team but also differences in interactions that have the power to shape team performance. Arguably, if the differences are small no team member emerges as coordinator and if differences are too high the coordinator becomes overwhelmed with his or her

job and peripheral members disengage from the group. The optimal level of performance is achieved at moderate levels of centralization.

Our results also show that it can be fruitful to investigate circumstances under which network properties facilitate or distract from team performance. Networks are essentially about the structural opportunities for the mobilization and flow of resources (Lin, 2005) but this alone says little about the quality of resources in the network. Our study suggests that the effectiveness of different network properties depends on the variety of the resources that flow through the network (cf. Hansen, 1999) and diversity is one of the team dimensions that have repeatedly been associated with resource variety (van Knippenberg & Schippers, 2007). We found that diverse teams required more centralization to perform well.

Finally, our results show no association between density and performance. These results contrast with some previous studies that have found that density in instrumental networks does predict team performance (see Balkundi & Harrison, 2006). The reasons for that are difficult to pinpoint and we can only speculate. Most previous studies have not controlled for network centralization in their analyses. Although conceptually distinct, density and centralization can be modestly correlated (as they were in our study). It could be that the results reported for density in previous studies would have been different had they also included network centralization in their analysis. Indeed, it has been argued that the effects of density and centralization should be considered simultaneously (Wasserman & Faust, 1994). However, the control model (Table 2) shows that leaving centralization out of the equation does not change the significance level for density. It might also be that the network type we researched affected the relationship between density and performance (Baron & Poldony, 1997). Density in workflow networks measures the extent to which everyone exchanges work related resources with everyone. On the one hand, this might have positive consequences because of everyone's involvement in the work process but this effect might be counterbalanced by the process loss due to redundant exchanges. Our results, however, are consistent with the MIT laboratory studies, which compared the effects of network density and network centralization on team performance and

did not find a direct effect of density on performance, either. More studies are needed that compare and contrast the effects of different network characteristics on team performance before any definitive claims can be made. Our research also needs to be seen in light of other network structures like structural holes or core-periphery (Balkundi, Kilduff, Barsness, & Michael, 2006; Cummings & Cross, 2003). These properties should be correlated with density and centralization but are based on different theoretical assumptions about their effect on performance. Network centralization and density deal with rather parsimonious and complementary properties of network in terms of average amount of and variation in interactions. Understanding the contingencies and antecedents of these properties is an important step for understanding the nature of more elaborate network properties. Further research is needed until we can say more about the generic effects of different network properties.

Finally, the teams in our sample were self-organizing student teams. These teams lacked formally appointed leaders but it is interesting to see that those teams were the most successful that adopted some degree of informal leadership. It is unclear how the results we have reported in this study might have differed if each team had been formally assigned a leader. In such teams, the relationship between network centralization and team performance may be complicated by where the formal leader is located in the task network structure. Balkundi and Harrison (2006) find in their meta-analysis that teams perform better when leaders are central in the team's network. But it is also possible, for example, that the individual around whom the task network is centralized is someone other than the formally appointed leader. Such emergent leaders could destabilize the group and detract from its performance, especially if the formal and emergent leaders fail to cooperate with each other (Mehra, Smith, Dixon, & Robertson, 2006; cf. Carson, Tesluk, & Marrone, 2007).

Limitations and Future Research

Our study examined over 400 people working in small (five-person) self-organizing teams.

The teams in our sample mostly had five members. This means that variations in group size did not interfere with our findings but group size could actually form another contingency for the effectiveness of centralized task network structure. For example, the chances for free-riding are higher

in bigger groups and centralization might bring about the authority that is required to ensure everyone's' contribution to the team (Coleman, 1990). Likewise, functional diversity was no issue in the teams that we studied because students in had not specialized at this point of their studies. This also allowed us to examine the influence of nationality diversity in isolation. Of course, functional diversity is another important source of information and knowledge heterogeneity in teams (Liang, 1994) and future research might investigate its interaction with task network centralization on team performance.

This study observed the task network at one point in time and examined how it influenced subsequent task performance. But task networks do not have to be static; they can change over time. It is possible that a deeper understanding of how networks influence team performance could be gained if studies were to examine how the pattern of change in network structure over time influences team performance. Some teams may start off with highly decentralized structures but then adopt highly centralized structures later in their life cycle, whereas others may follow the opposite pattern. Very little is known about the extent to which task networks in teams change over time and how these changes influence team performance (cf. Kilduff, Angelmar, & Mehra, 2000). We encourage researchers to adopt research designs that explicitly account for the possibility that the structure of task networks in teams can change over time, and that this pattern of change could influence the team's performance.

Finally, our study focused on the structure of social networks within teams. But previous research suggests that external social network ties also influence team performance (e.g., Reagans, Zuckerman, & McEvily, 2004; Oh et al., 2004). We did collect supplementary data on the number of external ties each team possessed by asking team members to list the names of individuals in other teams who they had turned to for advice regarding the project. We found that the number of external ties a team had was not a significant predictor of team performance (results available upon request). These count-based data, however, cannot provide insight into the *pattern* of inter-connectedness among the set of teams with whom a given team reported having external ties. We did not collect

complete cross-team data among the over 400 individuals in our sample because the collection of such network data would have been prohibitively time consuming for respondents. Nonetheless, richer data on the pattern of external team ties would allow future researchers to make more definitive claims about the relative impact of teams' internal and external social networks on team performance.

Implications for Practice

Our study highlights one of the challenges of post-bureaucratic organizations in a globalizing environment. These organizations tend to organize work in self-managed teams rather than rule-based hierarchies while employing people with increasingly nationality diverse backgrounds. A feature of self-managed teams is that they have to organize themselves; just as the teams in our sample. There is evidence that suggests that just too easily this freedom might paradoxically result in a high degree of centralization and informal control (Barker, 1993). This might not be surprising given that centralization seems to offer an intuitive solution to the problem of how to organize. However, adopting the right degree of centralization for team performance might be a particularly difficult task because teams need to find the 'sweet spot'. But employees often have inaccurate insights into the informal structure of their surrounding networks (Casciaro, 1999; Kilduff, Crossland, Tsai, & Krackardt, 2008). Given that the optimal level of centralization varies with the nationality diversity of team members this becomes even more of a challenge. Considering that companies implement (self-managed) teams to pursue organizational goals it seems sensitive to provide some training for teams to find the right degree of centralization and especially when team members differ in their nationality backgrounds.

Conclusion

Despite the recent upsurge of research on the effects of task network structure on team performance there is no agreement on the question which network structure facilitates team performance. Moreover, the network perspective has tended to ignore the influence of team members' attributes for team performance. Building on a stream of recent work, we have tried to suggest the

promise of combining both perspectives. Task network centralization (controlling for density) had an inverted u-shape relationship with team performance that was moderated by nationality diversity. These finding suggest that the right match between centralization and nationality diversity is crucial for team performance. We hope that this study helps to further establish network centralization as one of the fundamental network properties of teams and encourages researchers to explore individual attributes as contingencies of network structure

CHAPTER 5: GENERAL DISCUSSION

Diversity is thought to lift team, departmental, and organizational performance because it brings together individuals from various backgrounds, increases the available pool of knowledge and experiences and stimulates the elaboration of information. Despite these potential benefits more than 50 years of research have failed to find consistent main effects of diversity. Sometimes the effects of diversity have positive consequences for individuals and groups, sometimes none, and often negative. In this dissertation I argue that research on diversity can be facilitated through extending the 'classical' model of diversity. In short, the 'classical' model of diversity argues that diversity in a team affects social networks because diverse group members tend to associate with others with whom they share important demographic characteristics (i.e. homophily). This, in turn, is thought to facilitate or constrain the flow of resources in and between groups, which again is supposed to affect performance. I propose three potentially fruitful ways to extend this 'classical' perspective on diversity. First, shifting the focus from main effects to contingency models of diversity I argue that diversity should be considered a context in which teams and individuals act. Second, I argue that the diversity-network relationship sometimes might be weak, has ambiguous consequences for networks, and typically neglects the role of human agency. Therefore, I advocated the search for new network antecedents that explain networks beyond the influence of homophily and that consider the influence of discretionary human action. Third, I argue that instead of subsuming the network perspective under the diversity perspective both might rather be integrated into a contingency model.

Below I will first summarize the main findings of the empirical chapters in this dissertation. Second, I will discuss the implications for the study of diversity in general and its implications for future research. Third, I will address the strength and limitations of this study. Finally, I will conclude with a general statement.

Summary of main findings

In chapter two I investigated the leader directed voice behavior (i.e. challenging the status quo with constructive ideas for change) of managers who were dissimilar to their coworkers in terms of nationality. We hypothesized that employee nationality dissimilarity will strengthen the relationships between leader openness and leader nationality similarity with supervisor-directed voice. Results showed that leader openness and nationality similarity to the leader were more strongly related to supervisor-directed voice of nationality dissimilar managers than for more nationality similar managers. Nationality dissimilar managers were more likely to speak up to their leaders when they had the same nationality as their leaders and when leaders were open for ideas. We also explored two psychological mechanisms (i.e. psychological safety and affective commitment). Affective commitment mediated the interaction of leader openness and nationality dissimilarity but psychological safety the interaction of leader similarity and nationality dissimilarity.

The second empirical study (Chapter 3) tested the argument that the relationship between a focal employee's voice behaviors on a coworker's felt friendship strength for this employee is contingent on the structural holes (i.e. missing links in a network) that disconnect the focal employee's friends from each other. The hypothesis was supported in a longitudinal study in the health care sector. We found that employee voice was related to decreases in friendship strength if employees had highly redundant networks (few structural holes) and increased friendship strength if redundancy was low (many structural holes).

Finally, the fourth chapter tested the argument that the influence of team task network structure on team performance is contingent on the nationality diversity of team members. A study of five-person teams revealed that the relationship between network centralization (in the task/workflow network) and team performance was curvilinear. Performance was higher at moderate levels of centralization than at low and high levels of centralization. This relationship was moderated by nationality diversity. Nationality diverse teams required more centralization to achieve high performance than homogeneous teams.

Theoretical Implications and directions for future research

All studies in this dissertation hold implications for the respective theoretical domains in which they were conducted, which we discuss in each chapter. Here I will focus on the joint contributions of these studies for our understanding of diversity.

The first contribution of this dissertation is to highlight the potential benefits of treating diversity as a contextual variable rather than as main effect. In the first chapter we showed that employees' dissimilarity to their coworkers enhances the influence of leadership (i.e. leader openness and leader similarity) on supervisor-directed voice because it increased commitment to the organization and decreased fear of negative interpersonal consequences. This speaks to our argument that diversity as a contextual variable increases the salience of certain social cues that in turn shape the behavior of individuals. Members of categorical minorities depend frequently on out-group members to achieve their goals. Since out-group members favor their in-group members in allocation decisions dissimilar group members might fail to accomplish their goals because their interests might be neglected or discounted by the interest of out-group members. This might be especially the case when out-group members speak up for change and therefore, at least implicitly, criticize other members who are attached to the status quo. To better understand the consequences of their interactions with others we argue that dissimilar group members focus more on leaders because they have control over resources and sanctioning and reward power. Leadership cues that signal support should increase dissimilar employees' confidence in the success of their interpersonal endeavors and motivate them to act proactively. Of course, voice and its association with leadership openness and leader similarity are only one – if important – application of this argument. It seems equally important to investigate whether other interactions, like promotive behaviors directed at coworkers, depend more strongly on dissimilar group members' perceptions of their target's dispositional cues than for more similar employees. Future research might also want to test experimentally whether demographically dissimilar group members process dispositional information about leaders more carefully and whether the type of dispositional information affects their behaviors and attitudes. Finally, it would be

important to test whether these findings also hold for other social categories than nationality. Nationality was a salient category in the sample in which we tested our hypothesis but in other settings other categories might trigger in-group/ out-group categorization (e.g., gender in the military).

Chapter four provides additional support for the fruitfulness of considering diversity a contextual variable. Teams are a way of bringing together and leveraging the potentially varied skills and perspectives of diverse members (see Kozlowski & Bell, 2003). But there is also persuasive evidence to suggest that teams composed of diverse individuals can suffer from heightened conflict and a lack of coordination, which tends to detract from team performance. The findings of our study support our argument that diverse teams require more coordination to achieve similar levels of performance than homogeneous teams. We focused on task network centralization as a mean of coordination in self-managed teams but other factors like leadership should also be investigated. For example, Kearney and Gerbert (2009) show that (transformational) leadership was more important to facilitate information-elaboration in diverse teams. However, many other means of coordination like shared mental models or formal structure should be considered (e.g. shared mental models and formal structure).

A second contribution of this dissertation is to show the usefulness of considering human agency and, in particular, employee voice and past network position as predictor of network change. A large proportion of the literature on the formation of networks has focused on homophily (i.e. the tendency to associate with similar other) to explain variations in interpersonal relationships. But homophily can be stronger or weaker in organizations and teams, have opposing consequences for the formation of team network structures, and generally neglects the potential for human agency. Since networks are assumed to be the proximate cause of performance we focused here on employee voice and past network structure as antecedents of network change. Controlling for the effects of homphily, our results speak to the idea that interpersonal enterprises that require involvement in several and sometimes ambivalent social interactions might benefit from structural holes because they separate parties who would otherwise detect the inconsistency of these actions. Robust action, appearing

consistent while being involved in different interpersonal dealings, is important when employees speak up with ideas for organizational change even if they want to promote the organization. Organizations are political arenas where employees pursue various self-interests and it might be necessary to handle different interpretations of the advocated change to 'sell' it to one's coworkers. The potential to appear consistent while being ambiguous across situations might not only be important for the advocacy of organizational change. For example, self-monitors who behave like chameleons are known to seek brokerage positions where they can appear consistent to the outside. Future research might investigate if, for example, employees with a machiavellianistic personality are more likely exploit the opportunity provided by structural holes to strengthen friendship relations and gain access to the resources that they hold.

The third chapter of this dissertation provides some support of going beyond homophily to explain network formation in intra-organizational settings and open the door for the role of human agency. Thus, we hope we could broaden the scope of the network change literature, which has so far been dominated by a focus on homophily and neglected the importance of humans' purposeful actions.

Finally, we show (Chapter 4) that it might be fruitful to investigate circumstances under which network properties facilitate or distract from team performance. Networks are essentially about the structural opportunities for the mobilization and flow of resources but this alone says little about the quality of the resources that circulate in the network. Our study suggests that the effectiveness of different network properties depends on the variety of the resources that flow through the network and diversity is one of the team dimensions that have repeatedly been associated with resource variety . We found that diverse teams required more centralization to perform well. Hence, instead of assuming that diversity affects team performance through its impact on social networks we found support for the idea that networks operate within the context of the diversity of its members. This might have implications for network research in general because network researchers with their focus on structure have typically tended to neglect the importance of individual attributes. On the individual level it has

often be argued that associations with diverse social groups hold information benefits for the individual because information is more likely to be shared within social groups than between social groups. Whereas social network researchers have mostly measured access to diverse information in terms of a person's contacts into different social cluster it might also be useful to consider diversity in terms of the social attributes of these contacts.

Limitations

The empirical studies in this dissertation used data collected among respondents from various organizations and settings. We used longitudinal data as well as multi source ratings. These features, with varying degree for each study, increase our confidence in our results. However, a common limitation of all field studies is that they cannot establish causality. Therefore we would need experimental studies. Thus, another obvious future direction for research would be to replicate our findings and importantly by the mean of experimental study designs.

Another limitation of our findings is that despite involving respondents from more than 30 different nationalities (Chapter 2 and 4) we did not tap into the possible effect of cultural distance. That is, the actual dissimilarity between two persons from different nationalities. Rather, based on social identity theoretical considerations we assumed that social categories would trigger categorization independent of differences in cultural values between two persons. It might, of course, be possible that for example a Dutch and a German perceive each other as more similar than a Dutch and a Chinese. If this was the case the measures used in our studies should increase error variance, which would make the detection of significant effects more difficult. We also realize the ongoing debate about the usefulness of the different established formats of cultural values and there seems to be no agreement that using cultural distance measure would decrease error variance of our measures and not worse, increase it. Thus, we encourage other researchers to develop more sophisticated measures of cultural distance.

Conclusion

Increasing diversity in the workplace is a social reality that most companies but also other organizations in society are confronted with. Diversity holds the potential for organization to leverage their performance because diverse group members increase the pool of knowledge, experiences, perspectives, and ways of doing things. However, for more than 50 years no consistent main effects of diversity have been found. This dissertation addresses the 'classical' diversity model and extends it in three important ways. This dissertation argues and offers first support for the idea that the diversity paradigm that has dominated research during the last decades might be fruitfully extended by a) focusing on diversity as a contextual variable b) investigating the influence of human agency on network formation and c) consider the contingent effects of social networks and diversity.

Over the last decades diversity has become more important in virtually all parts of society. Recently politicians and (pseudo) intellectuals have repeatedly claimed that nationality diversity threatens the viability of organizations and societies and some go so far as to claim that history has shown that there is no possibility that nationality diversity can ever work; therebye making a Fukuyam-like statement about the end of history. Maybe it was the inability to find consistent effects of diversity, maybe the incapability of academia to communicate its insights to a broader audience, and very likely the limited scope of the critics of diversity that has lead to these premature conclusions. Clearly, structured research conducted with theoretic and empirical rigor is more than ever needed to qualify our thinking about the effects of diversity. Despite the fact that this dissertation can only offer a humble contribution to this topic I still hope that it will stimulate the exploration of new ways to reap the benefits of living in a diverse environment.

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NATIONALITY HETEROGENEITY AND INTERPERSONAL RELATIONSHIPS AT WORK

In this dissertation I test three new approaches to extend the 'classical' model of work-place diversity. The 'classical' model of workplace diversity assumes that diversity affects work outcomes via the mediating effects of social networks. I hypothesize that this model fruitfully can be extended by 1) considering that diversity forms a context in which employees act, 2) testing alternative predictors of network formation and employee behavior (i.e., employee voice), and 3) integrating diversity and social network perspectives in a contingency model. Three empirical studies support these hypotheses. In the first study, I show that the association between leadership and employee voice is stronger for nationality dissimilar employees. The second study finds that employee voice affects the strength of friendship relations but that this effect is contingent on employees' past position in the social network. Finally, the third study demonstrates that group performance is maximized at moderate levels of task network centralization but lowest at high and low levels of centralization but that this relation is moderated by nationality diversity. Nationality diverse teams required more centralization to achieve high performance than homogeneous teams. Finally, I discuss the implications of these findings for research on diversity and social networks.

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