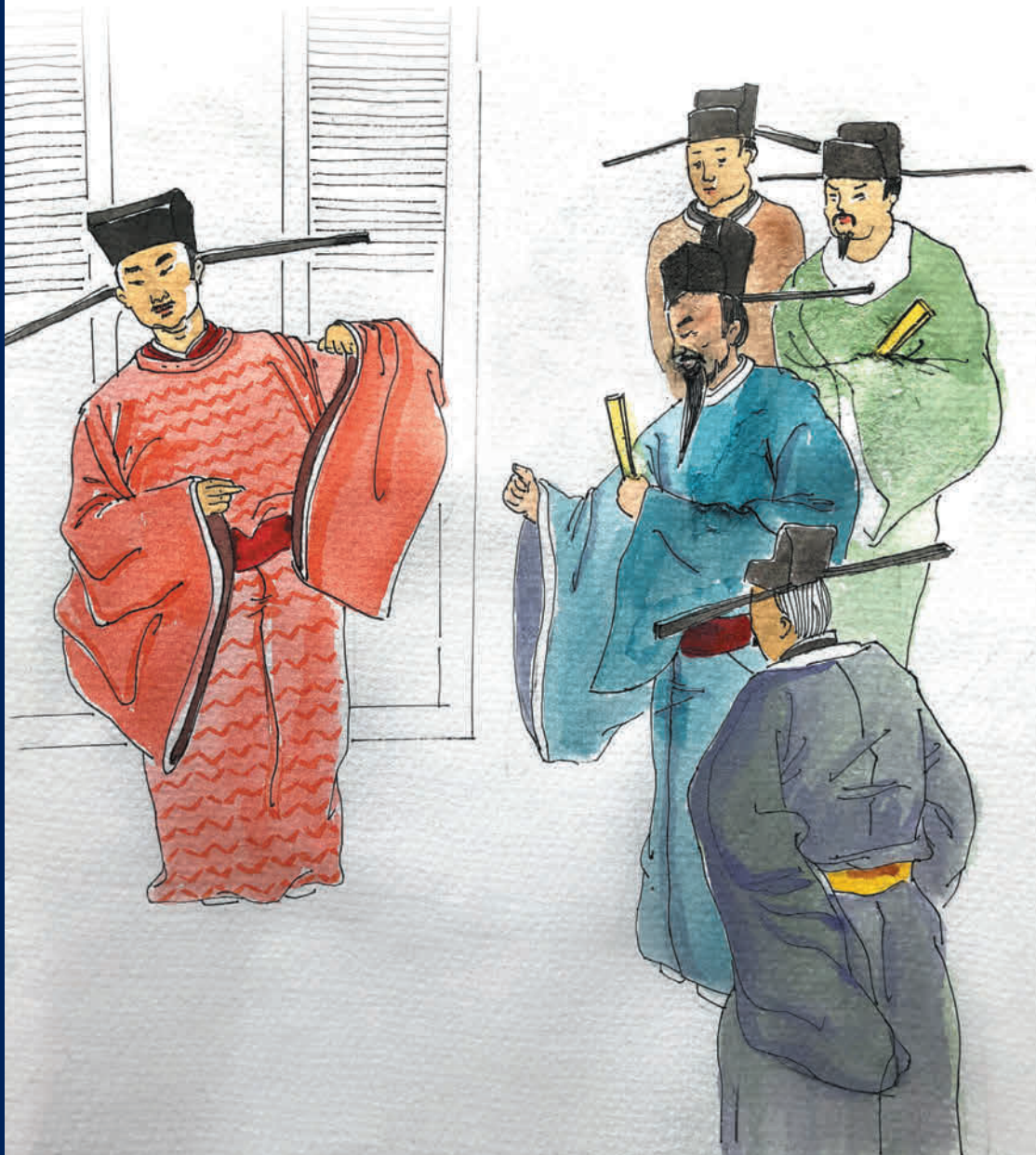
JING WU

A Configural Approach to Understanding Voice Behavior in Teams



A Configural Approach to Understanding Voice Behavior in Teams

A Configural Approach to Understanding Voice Behavior in Teams

Een Configuratiebenadering van Suggesties voor Verandering in Teams

Thesis

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The idea of cover image was generated by Jing Wu, and the image was painted by Jie Yan. It depicts a classic scene of Emperor Renzong (the man in red) of Song Dynasty (1010 – 1063 AD), having a meeting with his cabinet members. Renzong's reign has witnessed the peak of Song Dynasty. This is attributed, at least partly, to two management aspects he has strived to promote: a climate of openness and inclusiveness and a formalized voice system. Consequently, ministers across different levels were encouraged to freely express their opinions and raise suggestions that promoted various aspects of national development.

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Before having decided to pursue a PhD, I had been warned that doing a PhD sometimes feels like living alone on an isolated island and struggling to survive – you need to be self-reliant to face and tackle many problems, the solutions to which seem to play hide and seek with you often times. At different points of my PhD trajectory, I came to get how that means. Yet, after all these years, I truly feel and firmly believe that my "island" is connected with many many others. They have provided tremendous support for me, for which I am very much grateful.

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CHAPTER 1

General Introduction

Voice behavior refers to employee's expression of suggestions aimed at improving collective functioning (Van Dyne & LePine, 1998). Yet, employees do not always feel comfortable with expressing their suggestions or concerns and might prefer to remain silent even when they have opinions in mind. We have known some devastating collective failures, such as the Columbia space shuttle disaster, the recent Boeing crisis, and belated governmental interventions against the COVID-19 spread. These events happened, in part, either because employees remained silent when they had identified problems, or because raised problems were not tackled properly in a timely manner. Hence, it is not only necessary to encourage employees to express their ideas freely, but also important to advance our understanding of how raised voice can be translated into substantial change.

The major of extant research has approached voice as an individual behavior and identified a variety of factors that may predict employee voice behavior, including employee attributes, leader behaviors, and other contextual factors (Morrison, 2011; Morrison, 2014; Chamberlin, Newton, & LePine, 2017). In recent years, voice scholars have started to address whether voice from employees can be turned into improved collective outcomes, as assumed in the definition of voice (Detert, Burris, Harrison, & Martin, 2013), and how (e.g., Li, Liao, Tangirala, & Firth, 2017; Sherf, Sinha, Tangirala, & Awasty, 2018; Liang, Shu, & Farh, 2019). When examining the effect of voice within teams, these studies either focused on the overall volume of voice, assuming that the influence of voice was

exerted within teams as a whole, or focused on the average level of voice, assuming that voice was distributed in an egalitarian fashion among team members. These assumptions have constrained us from developing a more accurate understanding of the pattern of voice that occurs within teams and how the pattern affects team process and effectiveness.

To address the problems above, I adopt a configural approach (Kozlowski & Klein, 2000) to studying voice in a team context. The configural approach has been used to capture how the factors concerned get configured within a team and how the configuration pattern plays a role in predicting team emergent states, processes, and outcomes (e.g., DeRue, Hollenbeck, Ilgen, & Feltz, 2010; DeRue, Nahrgang, & Ashford, 2015; Li & Liao, 2014). This approach has enabled researchers to move beyond the additive model (Chan, 1998), on which prior research on the overall or average volume of voice in teams is built, and consider not only the amount of variance but, more importantly, the pattern of the factors within teams. For example, using the configural approach, scholars identified different types of configuration pattern of team efficacy beliefs and their effects on team processes and effectiveness (DeRue et al., 2010), or examined how leadership structure became configured in self-managing teams (DeRue et al., 2015).

In this dissertation, I apply such configural approach to furthering the investigation on voice behavior in teams. More specifically, I attempt to study how configuration in antecedents may predict occurrence of voice behavior and how configuration of voice influences teams. By conducting empirical studies, this dissertation will examine a) the antecedents of employee voice with a focus on dispersion in leader-member exchange

(LMX) relationship, captured by self-other (dis)similarity in LMX, b) how voice occurs in view of team configuration in expertise and its impact on team process and performance, and c) how voice distribution gets structured within teams over time and how teams proactively navigate this trajectory by placing right persons in central positions. As such, the dissertation aims at enriching the literatures on voice as well as teams and leadership, by incorporating a configural perspective to advance our understanding of how voice can be fueled and how voice exerts influences within teams.

Dissertation Overview

This dissertation consists of three independent empirical chapters. As these chapters are product of joint efforts by me, my supervisors and other co-authors, I will use "we" instead of "I" to present their contribution.

In Chapter 2, we examine the influences of leader-follower relationship on employee voice behavior. The quality of the leader-follower relationship captured by leader-member exchange (LMX) has been identified as a major influence on leader-directed voice. An important development is the recognition that leader-follower relationships are embedded in the context of others' LMX relationships, which puts the issue of self-other (dis)similarity in LMX relationships center-stage. We propose a conceptual development of this analysis in recognizing that LMX (dis)similarity has important social identity implications from which follows that not just LMX positive dissimilarity (having a better LMX relationship than others) may inspire voice, but also LMX similarity, and that the extent to which the former or the latter is the stronger driver of

voice is contingent on leader group prototypicality (the degree to which the leader is perceived to embody the collective identity). Specifically, we predict that LMX similarity is more predictive of voice with a more group prototypical leader, whereas LMX positive dissimilarity is more predictive of voice with a less group prototypical leader, and that the interactive effects are stronger for prohibitive voice (suggestions to discontinue a practice) than for promotive voice (suggestions to improve work practices). To test these predictions, we conducted a field survey study among 321 leader-member dyads nested within 47 teams in three companies in China.

Chapter 3 investigates how and when voice can benefit team performance with a focus on the dissimilarity in expertise among team members. Prior research has recognized that voice from team members could bring about desired team outcomes (Detert et al., 2013; Li et al., 2017; Liang et al., 2019). These studies have focused on the volume of voice, assuming implicitly that influences of voice were exerted on the team as a whole. However, voice might be better understood as being communicated to one or a few instead of all team members. This points to the necessity of studying who voice to whom in teams. Whether voice occurs between similar or dissimilar team members might affect the effectiveness in communicating ideas to others. We thus expect that the degree to which voice flows across a social category boundary within a team could exert an influence above and beyond the volume of voice. When voice flows across team members of dissimilar expertise, this could give rise to the difficulties in communicating ideas to one another. To overcome the difficulties, it is important to create energy or excitement for others when voicing to them and further galvanize them into taking actions and

improving collective performance. We thus predict that cross-expertise voice is likely to enhance team performance through fostering relational energy within the team, and that this effect will be more pronounced when the business environment is less uncertain because environmental uncertainty triggers the intergroup bias and, in turn, prevents individuals from being open-minded to outgroup members. We conducted a field survey study among 60 teams to test our predictions.

In Chapter 4, we examine how teams centralize their voice over time to perform better. Prior research on voice in teams has explicitly or implicitly worked under the assumption that voice is equally distributed among team members. For instance, when examining how voice in teams can help collective outcomes, studies tend to focus on the average voice of members, which assumes uniformity in expression of voice among those members (e.g., Podsakoff, Maynes, Whiting, & Podsakoff, 2015). Recent research has started questioning this assumption and highlighted that voice can be centralized around one or two members within teams, who speak up more than others, rather than distributed in an egalitarian manner across all the members (e.g., Sherf et al., 2018; also see Woolley, Chabris, Pentland, Hashmi, & Malone, 2010). We extend this line of research by proposing that, (a) as teams develop over time, voice within a team does have an increasing tendency to centralize around a few members as the team seeks to defer to most competent members and motivate them to voice more frequently, hence, (b) as time progresses, the likelihood that the members around whom voice centralizes in the team (i.e., those who speak up most frequently) are competent increases, (c) team composition (in openness and conscientiousness) predicts the extent to which the team quickly places

more competent members as central voicers in the team, and (d) teams that ultimately end up centralizing their voice around competent members tend to outperform those who do not. A longitudinal study of 176 student project teams was conducted to test our hypotheses.

Last, in Chapter 5, I summarize the findings of the empirical chapters and discuss their implications for different streams of literature and directions for future research.

Declaration of contributors

I would not have been able to accomplish this line of research had I not received support or advice from my great collaborators. Chapter 1 was written by Jing Wu (JW) and reviewed by Daan van Knippenberg (DvK) and Steffen Giessner (SG). Chapter 2 was designed by JW, DvK, and SG; data was collected and analyzed by JW, and DvK, SG, and Sut I Wong (SIW) provided advice on data analysis; the chapter was written by JW, DvK, and SG. Chapter 3 was designed by JW, Subrahmaniam Tangirala (ST), and DvK; data was collected by Pengcheng Zhang (PZ) and JW, and analyzed by JW; ST, DvK, and SG provided advice on data analysis; the chapter was written by JW, and DvK provided suggestions for revision. Chapter 4 was designed by JW, ST, DvK, and Rui Shu (RS); data was collected by JW with support from Hannes Leroy and Bex Hewett; data was analyzed by JW and RS, ST provided advice on data analysis, and Yiran Guo assisted with data clearing; the chapter was written by JW, ST, and RS, and DvK provided advice for revision. Chapter 5 was written by JW and reviewed by DvK and SG.

CHAPTER 2

When Will Followers Voice Up? Leader-Member Exchange (Dis)Similarity and Leader Group Prototypicality

INTRODUCTION

Voice behavior, defined as the expression of constructive suggestions, concerns, or ideas that are relevant to work (Dyne, Ang, & Botero, 2003), is conducive to improving organizational functioning (Argyris & Schön, 1996; Detert, Burris, Harrison, & Martin, 2013; Edmondson, 1999). When targeted at the leader, voice is more likely to be transformed into substantial change, because the leader has the clout to act upon the raised issues (Burris, Detert, & Chiaburu, 2008; Detert et al., 2013; Tröster & van Knippenberg, 2012). Such voice carries social risk (Liang, Farh, & Farh, 2012), however, in that leaders may respond negatively to the suggestion implying that things are not as good as they could be, especially when voice targets the discontinuation of practices (*prohibitive voice*) rather than the suggestion of new practices (*promotive voice*; Liang et al., 2012). Voice therefore is driven by a combination of the motivation to make a contribution and the expectation that the leader is open to voice. The quality of the leader-member exchange (LMX) relationship (Graen & Uhl-Bien, 1995) speaks to these factors and thus motivates voice (Burris et al., 2008; Van Dyne, Kamdar, & Joireman, 2008). Traditionally, LMX research has investigated the leader-member dyad in isolation, but there has been an emerging and influential recognition of the fact that LMX relationships are embedded in a context of other members' relationships with the leader. This put the issue of LMX (dis)similarity between self and others on the

agenda and resulted in the conclusion that LMX positive dissimilarity[1] (i.e., having a better LMX relationship than others) is positively related to desired work-related behaviors (Henderson, Wayne, Shore, Bommer, & Tetrick, 2008; Hu & Liden, 2013; Vidyarthi, Liden, Anand, Erdogan, & Ghosh, 2010). In the present study, we challenge the generality of this conclusion. We propose a social identity perspective (Ashforth & Mael, 1989; Brewer & Gardner, 1996; Sluss & Ashforth, 2007; Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; van Knippenberg & Hogg, 2003) on the relationship between LMX (dis)similarity and leader-directed voice, from which follows that not only LMX positive dissimilarity but also LMX similarity may motivate voice.

The social identity perspective is a broad-ranging theoretical body that developed from the original formulations of social identity theory (Tajfel & Turner, 1986) through further development in self-categorization theory (Turner et al., 1987) and integration with research in self-construal (Brewer & Gardner, 1996; van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004). The social identity perspective has an increasing presence in management research (Ashforth & Mael, 1989; Haslam, 2004; Hogg & Terry, 2000) with a strong emphasis on the analysis of leadership (Hogg, 2001; Hogg, van Knippenberg, & Rast, 2012a; van Knippenberg & Hogg, 2003). Core to the perspective is the notion that individuals define the self

[1] Please note that we refer throughout to LMX positive dissimilarity to clarify the direction of the comparison between one's own and others' LMXs. In our statistical analysis, LMX positive dissimilarity is captured by two component variables, one's own LMX and perceived coworkers' LMXs, based on polynomial regression and response surface methodology (Edwards, 2002), thus implying effects of positive as well as negative dissimilarity – LMX negative dissimilarity reflects the other end of the same continuum as LMX positive dissimilarity.

not only in uniquely individuating terms but also in terms of social connections (i.e., social identity): collective identity based on shared group membership, and relational identity based on a salient high-quality interpersonal relationship (Brewer & Gardner, 1996; Hogg, van Knippenberg, & Rast, 2012b; Sluss & Ashforth, 2007).

The starting point for our proposed social identity perspective on the relationship between LMX (dis)similarity and voice is the recognition that LMX similarity captures the core of collective identity – similarity within a group – whereas LMX positive dissimilarity captures the core of relational identity – a salient high-quality relationship. This is an important recognition, because it allows us to predict that leader-directed voice may be driven not only by LMX positive dissimilarity but also by LMX similarity. The motivating potential of LMX positive dissimilarity is aligned with the emerging LMX research emphasizing that LMX quality should be understood in relative terms, and is also consistent with notions of relational identity as inspiring motivation to contribute to the relationship by engaging in prosocial behavior as well as trust in the other (Sluss & Ashforth, 2007; van Knippenberg et al., 2004). The motivating potential of LMX similarity follows from the notion that collective identity is a key motivator of prosocial behavior in the service of the collective (Ashforth & Mael, 1989; van Knippenberg, 2000). This then raises the question when LMX similarity (and thus collective identity) or LMX positive dissimilarity (and thus relational identity) drives leader-directed voice.

To answer this question, we draw on the social identity theory of leadership (Hogg, 2001; van Knippenberg & Hogg, 2003), which is part of the social identity perspective, to identify leader group prototypicality – the

perception that the leader embodies the collective identity – as a key moderating influence. The logic here is that leader group prototypicality may reinforce the motivation for voice deriving from LMX similarity: people feel more invited to voice on behalf of the collective (i.e., the motivation derived from LMX similarity) to a leader seen to represent that collective (i.e., high leader group prototypicality), because the leader's representativeness heightens the salience of collective identity; conversely, people feel more invited to voice as a way of contributing to the leader-follower relationship (i.e., the motivation derived from LMX positive dissimilarity) to a leader seen as an individual distinct from that collective (i.e., low leader group prototypicality), because that distinctiveness reinforces the interpersonal (as opposed to group-based) relationship between leader and follower.

We develop this logic one step further to argue that the interactive influence of LMX (dis)similarity and leader group prototypicality is stronger for prohibitive voice than for promotive voice. Prior work has distinguished promotive voice (i.e., expression of suggestions to improve work procedures and practice) from prohibitive voice (i.e., expression of concerns and worries to prevent potential failures; Liang et al., 2012; Lin & Johnson, 2015; Wei, Zhang, & Chen, 2015). Prohibitive voice entails greater social risk and is typically less appreciated than promotive voice (Liang et al., 2012; Lin & Johnson, 2015). Therefore, prohibitive voice will be more strongly influenced by factors associated with the prosocial motivation to contribute and the expectation of leader openness to voice – precisely the interactive influences we predict for LMX (dis)similarity and leader group prototypicality.

LMX research has a history of more than 40 years studying leader-follower relationships with a focus on the leader-member dyad independent of other members' relationships with the same leader (Graen & Uhl-Bien, 1995). Arguably the most important conceptual development in LMX research in recent years has been the recognition that a member's LMX relationship is embedded in a context of other members' relationships with the same leader (e.g., Henderson et al., 2008; Tse, Lam, Lawrence, & Huang, 2013; Vidyarthi et al., 2010). The social identity perspective on LMX (dis)similarity we propose is an important conceptual development of this emerging perspective, and a development that challenges the generality of the notion that only LMX positive dissimilarity motivates positive outcomes such as voice. The value of the social identity perspective for the study of LMX (dis)similarity and voice is illustrated by identifying the motivating potential of LMX similarity, and identifying leader group prototypicality – a factor uniquely tied to the social identity perspective – as playing a moderating role in the influence of LMX similarity versus LMX positive dissimilarity. These findings invite a reconsideration of LMX influences in terms of their social identity implications.

THEORY AND HYPOTHESES

Leader-Directed Prohibitive and Promotive Voice

For teams to benefit from the team members' suggestions for improving collective functioning, it is crucial that team members are motivated and feel free to voice up. Leader-directed voice is particularly important, because the leader occupies the position where he or she can act upon change-oriented suggestions (Detert & Burris, 2007; Detert et al., 2013; Tröster & van Knippenberg, 2012). However, voice behavior

targeted at the leader carries social risk, because the voice could be misinterpreted as an attempt to undermine the credibility of the leader (Liang et al., 2012; Tepper, Duffy, Hoobler, & Ensley, 2004), and the leader is in a position to reward or punish the voicer (Burris et al., 2008; Detert & Burris, 2007; Tröster & van Knippenberg, 2012). Thus, before voicing ideas to a leader, followers need to be both sufficiently motivated and sufficiently confident that the voice will be well received, and this is where social influences on voice come in (Liang et al., 2012).

Voice can be distinguished into prohibitive voice (i.e., raising concerns to prevent potential problems) and promotive voice (i.e., proposing suggestion to improve work practices; Liang et al., 2012). Prohibitive voice entails more social risk than promotive voice (Liang et al., 2012; Lin & Johnson, 2015; Wei et al., 2015) in that pointing out potential harm may be negatively interpreted as a critique of the leader and invite negative emotion and defensiveness, whereas the good intentions underlying promotive voice is more easily recognized (Liang et al., 2012). As a consequence, prohibitive voice will be more contingent on social influences that speak to the motivation to contribute and expectations of leader's openness than promotive voice. We will first develop our analysis of LMX (dis)similarity and voice more generally, and revisit this distinction between promotive and prohibitive voice and the notion that the latter is more sensitive to social influences than the former in the final section of our conceptual analysis.

LMX and Leader-Directed Voice

As far as the social influences behind voice are concerned, the LMX relationship (i.e., the social exchange relationship between a leader and

follower; Graen & Uhl-Bien, 1995; Sparrowe & Liden, 1997) has been identified as an important determinant of leader-directed voice (Burris et al., 2008; Van Dyne et al., 2008). The rationale is that employees with good LMX relationships tend to reciprocate the leader's favorable treatment by exhibiting extra-role behavior such as voicing up to the leader (Van Dyne et al., 2008), presumably both because they are more motivated to make a contribution and because they have more positive expectations about the leader's openness to their voice. However, studying the effect of LMX relationship quality without considering its "nested" nature – the fact that an LMX relationship exists in the context of others' LMX relationships – fails to fully capture how LMX affects voice. The argument here is that LMX quality is not (only) understood in absolute terms but (also) in relative terms; to a substantial degree, a good relationship is understood as a relationship that is better than those of others (cf. Hooper & Martin, 2008; Liu, Tangirala, & Ramanujam, 2013; Sparrowe & Liden, 1997; Van Dyne et al., 2008; Vidyarthi et al., 2010).

At work, most individuals are embedded in a social context (e.g., a team, work group, or department) in which others have an LMX relationship with the same leader. As a result, individuals will have a sense of not only their own LMX relationship with the leader but also those of others working with the leader (Tse et al., 2013; Vidyarthi et al., 2010). Individuals' perceptions of the others' LMX relationships (i.e., how people perceive others' LMX relationships and not how those others experience the relationships[2]) form a basis for social comparisons (Festinger, 1954),

[2] This is not to say that one could not also study LMX (dis)similarity through a focus on coworkers' LMX relationships as experience by others – and indeed this has been done in

from which people may conclude that their own LMX relationship is similar to, better, or worse than those of others. From this perspective, relationship quality is understood to a substantial degree in relative terms, which gives rise to the prediction that LMX positive dissimilarity (i.e., having a better LMX relationship than others) is positively related to desired behaviors such as task performance and organizational citizenship behavior. This is exactly what research on relative LMX has found (e.g., Harris, Li, & Kirkman, 2014; Henderson et al., 2008; Vidyarthi et al., 2010). An obvious expectation would thus be that LMX positive dissimilarity motivates leader-directed voice.

In the current study, we do not argue against the motivating potential of LMX positive dissimilarity, but argue against the generality of the conclusion that it is only LMX positive dissimilarity that motivates positive outcomes such as voice. The conclusion that LMX positive dissimilarity motivates positive outcomes is a straightforward extrapolation of the dyadic LMX perspective to the study of relative LMX. We argue that this is an extrapolation that in its unqualified form does not recognize the social identity implications of LMX (dis)similarity and the motivating potential of LMX similarity.

Social Identity Perspective on LMX (Dis)Similarity – Voice Relationship

Originating in social psychology and increasingly also present in research in organizational behavior (Ashforth & Mael, 1989; Haslam, 2004;

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research on relative LMX (RLMX; Harris, Li, & Kirkman, 2014; Henderson, Wayne, Shore, Bommer, & Tetrick, 2008; Vidyarthi, Liden, Anand, Erdogan, & Ghosh, 2010). Rather, the point is that the more proximal influence is the individual's perception of others' LMX, and in that sense a focus on RLMX can be understood to revolve around a proxy for these perceptions.

Hogg & Terry, 2000), the social identity perspective is a theoretical framework formed by the original social identity theory (Tajfel & Turner, 1986) and its developments in self-categorization theory (Turner et al., 1987) and research in self-construal (Brewer & Gardner, 1996). Core to the social identity perspective is the notion that individuals may define the self not only in terms of individuating characteristics, but also in terms of social connections. Originally the emphasis was on collective identity, a social identity defined in terms of a group membership and based on the shared similarities with members of a social group (Ashforth & Mael, 1989; Tajfel & Turner, 1986; Turner et al., 1987). More recent developments integrated this with insights in relational identity, a social identity defined in terms of the interpersonal relationship with a significant other (Brewer & Gardner, 1996; Sluss & Ashforth, 2007; Sluss, Ployhart, Cobb, & Ashforth, 2012).

One important reason why these social identities may impact organizational behavior is that they are associated with the motivation to serve the best interest of the social unit captured by the identity – the group (team, organization, etc.) referenced by collective identity or the relationship referenced by relational identity. Social identity – both collective and relational – is associated with an internalization of the interests of the entity in reference to which the identity is defined (i.e., "our interests") such that collective identity motivates individuals to pursue the collective interest, and relational identity motivates the individual to pursue the interests associated with the interpersonal relationship on which the relational identity is based (Ashforth & Mael, 1989; Sluss & Ashforth, 2007; van Knippenberg, 2000; van Knippenberg et al., 2004). Such motivations are highly relevant to leader-directed voice, because, as we

outlined in the previous section, voice is the behavior motivated by a desire to make a prosocial contribution. These social identity insights are also highly relevant to LMX (dis)similarity because the communalities and differentiations captured by LMX similarity and dissimilarity map directly onto the bases for collective and relational identities.

LMX positive dissimilarity reflects the essence of relational identity – a salient, high-quality interpersonal relationship. When a follower has a better LMX relationship than coworkers, this particularly positive relationship with the leader can be assumed to render a relational identity based on that positive relationship more salient (Sluss & Ashforth, 2007; Walumbwa & Hartnell, 2011; cf. van Knippenberg et al., 2004). Relational identity rooted in the favorable relationship with the leader would motivate leader-directed voice as a contribution to that relationship. This prediction is consistent with the core proposition from LMX theory that followers are motivated to reciprocate favorable treatment from the leader (Dansereau, Graen, & Haga, 1975; Graen & Uhl-Bien, 1995) by means of engaging in leader-directed voice (Van Dyne et al., 2008). It is also consistent with the available evidence in LMX differentiation regarding the association of LMX positive dissimilarity and positive outcomes (e.g., Henderson, et al., 2008; Hu & Liden, 2013). In short, a relational identity understanding of LMX positive dissimilarity is in line with the broader LMX notion that a high-quality LMX relationship motivates desired outcomes such as voice.

At the same time, LMX similarity captures the essence of collective identity – communality among group members. Perceived similarity is the core defining element of collective identity (Ashforth & Mael, 1989; Tajfel & Turner, 1986; Turner et al., 1987), and LMX similarity can be assumed

to render collective identity salient[3]. As outlined in the previous, salient collective identity motivates contributions to the collective, and voice is a behavior aimed at improving the collective functioning. The salient collective identity may lead followers to internalize the collective interests and be motivated to contribute to the team (Liu, Zhu, & Yang, 2010). Leader-directed voice as a means to contribute to the team would be positively related to such a motivation. This notion is also consistent with evidence that equal treatment of team members by the team leader can motivate desired outcomes, including more positive responses to the leader (Hogg et al., 2005), job satisfaction (Hooper & Martin, 2008), and helping behavior (De Cremer, van Dijke, & Mayer, 2010). In short, directly building on the social identity perspective as well as on the limited evidence for the positive influence of equal treatment of team members by the team leader, we may expect that LMX similarity motivates leader-directed voice.

Both the motivating potential of LMX positive dissimilarity and relational identity and the motivating potential of LMX similarity and collective identity are in line with the social identity perspective on LMX (dis)similarity and leader-directed voice. Even so, the notion that not only LMX positive dissimilarity but also LMX similarity may motivate voice

[3] Our proposition that LMX similarity inspires greater salience of collective identity than LMX dissimilarity is not at odds with the notion that LMX positive dissimilarity may lead to higher group identification than LMX negative dissimilarity (Tse, Ashkanasy, & Dasborough, 2012). Our focus here is on the comparison between LMX similarity and LMX dissimilarity, not on the comparison between LMX positive and negative dissimilarity.

does raise the question whether there is a moderator affecting the extent to which the former or the latter has a stronger influence on voice. We propose that the social identity perspective points to moderating role of leader group prototypicality in this respect.

Leader Group Prototypicality as Moderator of LMX (Dis)Similarity – Voice Relationship

The social identity analysis of leadership (Hogg, 2001; van Knippenberg & Hogg, 2003) outlines how social identity informs responses to leadership. Core to this analysis is the concept of leader group prototypicality. The group prototype refers to a mental representation of the collective identity – what members of the group have in common and what differentiates the group from other groups (Turner et al., 1987). In a related vein, leader group prototypicality refers to the extent to which the leader is perceived to be representative of the group identity. The more a leader is perceived to be group prototypical, the more group interests, norms, and values are assumed to be internalized by the leader, and the more members trust the leader to act in the best interest of the group (Giessner & van Knippenberg, 2008; Giessner, van Knippenberg, van Ginkel, & Sleebos, 2013; Platow & van Knippenberg, 2001; van Knippenberg & van Knippenberg, 2005). Therefore, leader group prototypicality is more of a positive influence on responses to leadership when members' collective identity is more salient (Hains, Hogg, & Duck, 1997; Hogg, 2001). This social identity analysis of leadership has been well-supported in the lab and the field in a range of countries across the world (van Knippenberg, 2011; e.g., De Cremer et al., 2010; Ullrich, Christ, & van Dick, 2009)

We propose that these insights are highly relevant to the influence of LMX (dis)similarity on leader-directed voice. We have outlined how LMX similarity is associated with collective identity salience. On the basis of the social identity analysis of leadership, we may propose that this salient collective identity leads members to have higher trust in the leader's group-serving intentions when the leader is more group prototypical – and thus also in the leader's openness to group-serving suggestions (i.e., voice). Moreover, a group prototypical leader's perceived credentials as embodying the group is a contextual identity cue (Turner et al., 1987) to further heighten the salience of the collective identity (Sluss et al., 2012).

Leader group prototypicality thus is a match with the salient collective identity associated with LMX similarity, both because it underscores the collective identity and because leader group prototypicality is associated with the perception that the leader shares the group-serving motivation inspired by collective identity. Because leader-directed voice is motivated by the combination of the motivation to contribute and the expectation that the leader is open to one's suggestions, we propose that LMX similarity (and thus collective identity) is more positively related to leader-directed voice with higher leader group prototypicality. Therefore, we propose Hypothesis 1a and 1b.

Hypothesis 1: Leader group prototypicality moderates the relationship between LMX (dis)similarity and leader-directed voice behavior such that LMX similarity is more positively related to leader-directed (a) prohibitive voice and (b) promotive voice the more group prototypical the leader is perceived to be.

In contrast, we propose that LMX positive dissimilarity is more positively related to leader-directed voice with lower leader group prototypicality. Low leader group prototypicality implies the perception that the leader is not representative of the collective identity (Hogg, 2001). Perceptually, this differentiates the leader from the group and emphasizes the leader's individual characteristics and interpersonal relations. Such contextual identity cues (Turner et al., 1987) are a mismatch with collective identity but a match with relational identity (cf. Hogg & Martin, 2003; Sluss & Ashforth, 2007; van Knippenberg et al., 2004). Low leader group prototypicality would thus emphasize the interpersonal relationship and the relational identity that has been rendered salient by LMX positive dissimilarity. The emphasis on the interpersonal relationship (rather than a group-based relationship) would also be aligned with the basis for trust in the leader's openness for individuals with LMX positive dissimilarity (i.e., their high-quality interpersonal relationship with the leader) and be a match with their motivation to contribute to the relationship associated with relational identity. Therefore, LMX positive dissimilarity will more likely motivate leader-directed voice with lower leader group prototypicality, as proposed in Hypothesis 2a and 2b.

Hypothesis 2: Leader group prototypicality moderates the relationship between LMX (dis)similarity and leader-directed voice behavior such that LMX positive dissimilarity is more positively related to leader-directed (a) prohibitive voice and (b) promotive voice the less group prototypical the leader is perceived to be.

Note that our analysis captures the influence of LMX negative dissimilarity by implication. LMX negative dissimilarity represents the

other end of the same continuum as LMX positive dissimilarity, and the implication of LMX positive dissimilarity as a positive influence on voice is that LMX negative dissimilarity results in less voice than LMX positive dissimilarity, especially when the leader is less group prototypical. As LMX negative and positive dissimilarity refers to the same continuum, we do not propose a separate hypothesis for the effect of LMX negative dissimilarity, but include this observation for clarification.

Differential Effects on Prohibitive vs. Promotive Voice

Earlier we introduced the distinction between prohibitive and promotive voice (Liang et al., 2012). Both these types of voice are of importance to organizations while fulfilling different purposes. Promotive voice is aimed at improving the status quo, while prohibitive voice is to prevent potential harm from occurring (Liang et al., 2012; Lin & Johnson, 2015). Research has shown that people are more hesitant to engage in prohibitive voice than in promotive voice. This is because prohibitive voice is associated with greater social risks related to negative response from others – pointing out potential problems may invite negative interpretations of one's intentions and be seen as undermining the credibility of the person responsible (Liang et al., 2012; Lin & Johnson, 2015; Wei et al., 2015). Recipients of voice more easily appreciate a suggestion for improvement (promotive voice) than a call to discontinue certain courses of action (prohibitive voice), because the latter may carry accusatory connotations (Liang et al., 2012). As a result, people may engage in promotive voice more unrestrained than in prohibitive voice, and prohibitive voice may be more contingent on the social influences that fuel voice than promotive voice. As argued previously, LMX similarity combined with a more group

prototypical leader may encourage a follower to voice up out of the motivation to contribute to the salient collective identity and the belief in leader's openness to one's suggestions; LMX positive dissimilarity together with a less group prototypical leader may lead a follower to voice up out of the motivation to serve the interest of the relation identity based on one's positive relationship with the leader and the belief in leader's openness to one's voice. We may therefore propose that the motivating effects of LMX (dis)similarity that renders social identity salient will be stronger for prohibitive voice than for promotive voice. Thus, we propose Hypothesis 3 and 4.

Hypothesis 3. The interactive effect that LMX similarity is more positively related to leader-directed voice with higher leader group prototypicality is stronger for prohibitive voice than for promotive voice.

Hypothesis 4. The interactive effect that LMX positive dissimilarity is more positively related to leader-directed voice with lower leader group prototypicality is stronger for prohibitive voice than for promotive voice.

METHODS

Data and Sample

The data were collected in 47 work groups from three companies located in Southeastern China, with Company A engaged in consulting and supervision of bridge and railway construction and Company B and C in bridge construction. Participants were managerial staff with expertise on bridge or railway construction/engineering. The work groups were either project teams or functional teams. One supervisor headed each team.

This sample is particularly appropriate for investigating follower voice behavior in that the tasks in which respondents were engaged provide

a context in which voice is of importance. For one thing, construction and project supervision require vigilance, accuracy, and error detection, which would potentially drive the prohibitive voice aimed at preventing potential harm. For another, it is also important that employees exhibit promotive voice; as such, they can help their teams to improve work practices or procedures.

We distributed and collected the questionnaires on-site. To guarantee confidentiality, we instructed each respondent to put the questionnaire into a sealed envelope after filling it out. In order to persuade and motivate the companies to collaborate with our survey, we promised to provide research reports on a company level. During the whole process of handing out and picking up questionnaires, human resource management staff helped remind those who had not finished or returned questionnaires in a timely manner, which contributed to high response rates. Of the 47 supervisor questionnaires and 362 subordinate questionnaires we handed out, 47 supervisor questionnaires (100% response rate) and 321 subordinate questionnaires (88.7% response rate) were returned, respectively. Specifically, 56 of 69 subordinates from Company A returned their questionnaires to us (81.2% response rate); 139 of 150 subordinates from Company B returned their questionnaires to us (92.7% response rate); 126 of 143 subordinates from Company C returned their questionnaires to us (88.1% response rate). Hence, a total of 321 supervisor-subordinate dyads constituted the final sample for our analyses. Among the subordinates, 35.5% were female; the mean age was 34.53 years (SD = 9.97). Among the supervisors, 17.0% were female; the mean age was 42.55 years (SD = 8.72).

To guarantee that the respondents had been working together long enough to have a sense of coworkers' relationships with their common leader, we assessed the group tenure of respondents: 16.2% of them were working together less than 1 year; 52.6% were between 1 to 5 years; 19.3% were between 6 to 10 years; 11.1% were more than 10 years. These figures reveal that the time the respondents spent together would be sufficient to give a focal respondent a sense of coworkers' relationships with the same leader.

Measures

All items were measured on a scale ranging from *1 = strongly disagree* to *7 = strongly agree*. Translation/back-translation procedures (Brislin, 1986) were followed to translate items from English into Chinese. Means, standard deviations, inter-correlations and reliability coefficients of all the measures are displayed in Table 1.

LMX similarity and dissimilarity were captured by the combination of two component variables, LMX self and LMX others, which is tied in with the analytical method we used – polynomial regression and response surface analyses (Edwards, 2002; Edwards & Parry, 1993). More specifically, we focused on the patterns along two critical lines in the response surfaces, namely, the *similarity line* where LMX self = LMX others and the *dissimilarity line* where LMX self = -LMX others. We offered a more detailed explanation in the Analytic Strategy section to illustrate how LMX self and LMX others jointly capture the LMX similarity and dissimilarity and how to interpret the response surfaces.

LMX self was measured using the 8-item scale developed by Bernerth and his colleagues (2007). With an emphasis on social exchange, this

measure has proved to have higher content validity than any other measure on leader-member exchange relationship (Colquitt, Baer, Long, & Halvorsen-Ganepola, 2014). Followers evaluated the extent to which they agreed with statements, such as "My team leader and I have a two-way exchange relationship" and "If I do something for my team leader, he or she will eventually repay me".

LMX others was assessed using the same measure of LMX self, but we adjusted the measure such that it refers to focal follower's perception of coworkers' LMXs. Example items include: "My team leader and my team coworkers have two-way exchange relationships", and "If my team coworkers do something for my team leader, he or she will eventually repay them".

Leader group prototypicality. Followers responded to a 7-item measure adapted from B. van Knippenberg and van Knippenberg (2005). Example items include "My supervisor is characteristic of who we are as a team" and "My supervisor represents what we stand for as a team".

Voice. Immediate supervisors evaluated the leader-directed voice behavior of their followers. Voice was measured using the scale developed by Liang and his colleagues (2012). They distinguished voice into prohibitive voice and promotive voice. We adapted the scale by focusing the target of voice on the leader. With an eye on the overall length of the survey (i.e., because raters need to respond to the same items for multiple individuals), we selected three out of the five items with highest loadings for both types of voice. An example item of prohibitive voice is "The follower speaks up honestly to leader with problems that might cause serious loss to work unit, even when/though dissenting opinions exist", and

an example item of promotive voice is "The follower proactively suggests new projects to the leader which are beneficial to the work unit". A separate data gathering effort targeted also at Chinese respondents showed that these sets of three items loaded on the same factors as the items we excluded from the Liang et al. (2012) scale for our study measurement[4].

Control variables. It has been suggested that leader-follower similarity is associated with follower voice (e.g., Wang, Hsieh, Tsai, & Cheng, 2012). Accordingly, we controlled for leader-follower similarity in age and gender. Similarity in age was computed as a difference score, and similarity in gender was operationalized as a dummy variable (0 = "different gender" and 1 = "same gender"). Besides, team type, a group-level variable, was also controlled for (0 = "project team" and 1 = "functional team"). This is due to the differences of tasks – in project teams employees are engaged in projects related to bridge/railway construction or project supervision whereas in the functional teams employees are largely engaged in tasks regarding coordination, logistics, and so on. Thus, there might be more room for voice in project teams than in functional teams.

Analytic Strategy

Given the nested structure of the data (i.e., a leader was to evaluate multiple team members; mean team size was 6.83; team size ranged from 3 to 16), we first examined if there was shared variance between the leaders, as it could bias the standard error estimate (Jansen & Kristof-Brown, 2005). We used the leaders as the group variable and inspected the null hierarchical models including only the dependent variable. The results showed that a meaningful proportion of variance in voice was explained by

[4] Details of this study are available from the authors upon request.

group membership (for prohibitive voice, ICC[1] = 0.38, ICC[2] = 0.82; for promotive voice, ICC[1] = 0.08, ICC[2] = 0.37). Chi-square tests also revealed that a significant proportion of variance was accounted for at the group level for both prohibitive voice ($\chi^2[45] = 256.52$, $p < .001$) and promotive voice ($\chi^2[45] = 75.32$, $p = .003$). Accordingly, the hierarchical linear modeling (HLM) was adopted to take into account the between-group variance in our analyses, though all the variables concerned are conceptually at the individual level (e.g., Detert & Burris, 2007).

To test the proposed hypotheses, we employed multilevel polynomial regression, i.e., incorporating the polynomial regression analysis in HLM (Wong & Giessner, 2018; Jansen & Kristof-Brown, 2005) for two reasons. First, the similarity between one's own LMX and coworkers' LMX relationships falls in the scope of congruence issue, i.e., fit, similarity, or agreement between two components, for which the polynomial regression analysis is particularly appropriate (Edwards & Parry, 1993). Polynomial regression analysis can be used to avoid the problems resulting from difference scores (Edwards, 1994). Second, combined with the response surface method, polynomial regression allows for a closer examination and more nuanced description of the relationship between the two components studied (Edwards, 2002; Edwards & Parry, 1993), i.e., LMX self and LMX others in our study. Hence, multilevel polynomial regression and response surface methodology were employed in our analyses.

We first scale-centered (Edwards & Parry, 1993) LMX self (LMXS) and LMX others (LMXO) to minimize potential multicollinearity between the component measures and their corresponding high-order terms (Aiken & West, 1991). In order to avoid misinterpretation of the significance of the

moderation polynomial terms, a four-step procedure was followed. In the beginning, we included solely control variables (i.e., age similarity, gender similarity, and team type). Then we performed polynomial regression. To simplify illustration of the procedure of polynomial regression analysis, we excluded all the control variables from the equations displayed below, though they were included in every step of our analyses. The effects of LMX similarity and dissimilarity on leader-directed voice are captured by the equation:

$$V = b_0 + b_1S + b_2O + b_3S^2 + b_4SO + b_5O^2 + e, \quad (1)$$

where V represents leader-directed prohibitive or promotive voice, S represents LMXS, and O represents LMXO. Prior to the testing of moderation effect, the direct effect of the moderator should be controlled for (Vogel, Rodell, & Lynch, 2016):

$$V = b_0 + b_1S + b_2O + b_3S^2 + b_4SO + b_5O^2 + b_6P + e, \quad (2)$$

where P represents leader group prototypicality. Last, the five terms representing the interactive effect of LMX (dis)similarity and leader group prototypicality were added into the equation:

$$V = b_0 + b_1S + b_2O + b_3S^2 + b_4SO + b_5O^2 + b_6P + b_7SP + b_8OP + b_9S^2P + b_{10}SOP + b_{11}O^2P + e, \quad (3)$$

where the five terms SP, OP, S^2P, SOP, and O^2P jointly represent the moderation effect of leader group prototypicality. The hypothesized moderation effect was tested by assessing the improvement in model fit from Equation (2) to Equation (3) yielded by those five terms (Edwards, 1996; Vogel et al., 2016).

After polynomial regression analyses, we performed response surface analyses to assess the direction of the moderating effect by inspecting the

slope and curvature along two critical lines, i.e., the similarity line (LMXS = LMXO) and dissimilarity line (LMXS = -LMXO). The linear slope at the point LMXS = 0 and curvature along the LMX similarity and dissimilarity lines were calculated by substituting values one standard deviation above and below the mean of leader group prototypicality. Figure 1 illustrates how the hypothesized surfaces for LMX similarity and LMX positive dissimilarity effects may look like. Hypothesis 1a/b predicts that when the leader is viewed as more group prototypical, a follower experiencing greater LMX similarity is more prone to voice to the leader. This hypothesis is supported if the curvature along the dissimilarity line (i.e., a_4) is significantly negative when leader group prototypicality is high. That is, the surface along the dissimilarity line (LMXS = -LMXO) is an inverted U-shaped one; meanwhile, a higher level of voice behavior is expected along the similarity line (LMXS = LMXO)[5].

Insert Figure 1 about here

Hypothesis 2a/b posits that when the leader is viewed as less group prototypical, LMX positive dissimilarity is more positively related to voice. This hypothesis is supported when the linear slope along the dissimilarity line (i.e., a_3) is significantly positive when LGP is low. That is, there will be a linear increase in voice behavior from the left lower corner (LMXS = -3

[5] In the social identity perspective, it is similarity and not quality of relationships that defines collective identity, and we do not anticipate that quality makes a difference to voice along the similarity line. Response surface analysis also informs us about possible differences in the LMX similarity effect at higher versus lower levels of relationship quality, however, so even though these are not anticipated, the analysis would reveal them if they exist.

and LMXO = 3) to the right upper corner (LMXS = 3 and LMXO = -3), and more voice is expected in the area where one's own LMX is higher than coworkers' LMX relationships (i.e., LMXS > LMXO).

Hypothesis 3 and 4 anticipate that the proposed interactive effect of LMX dis(similarity) and leader group prototypicality on leader-directed voice is stronger for prohibitive voice than for promotive voice. To test Hypothesis 3, we use bootstrapping to compare the difference in the curvature along the dissimilarity line between the two types of voice under the condition of high leader group prototypicality. To test Hypothesis 4, we compare the difference in linear slope along the dissimilarity line between the two types of voice under the condition of low leader group prototypicality with bootstrapping. If these differences are significant, i.e., the 95% confidence intervals do not include zero, Hypothesis 3 and 4 will be supported.

RESULTS

Table 1 shows the means, standard deviations, inter-correlations and reliability coefficients of the variables. Confirmatory factor analyses (CFA) were conducted to examine the discriminate validity of the constructs, especially for the ones evaluated by subordinates (i.e., LMX self, LMX others, and leader group prototypicality) and the others assessed by supervisors (i.e., promotive voice and prohibitive voice). We compared the proposed five-factor baseline model with six alternative models. As shown in Table 2, the baseline model (Model 1: χ^2 [332] = 829.33, CFI = .97, NNFI = .96, SRMR = .066, RMSEA = .070) fit the data best and displayed significant improvement in fit indexes over the alternative models (Model 2-7). Also, we performed CFA for the two supervisor-rated constructs (i.e.,

prohibitive voice and promotive voice) without the self-reported constructs. For the single-factor model, χ^2 = 642.66, *df* = 8; CFI = 0.71, NNFI = 0.46, SRMR = 0.130, RMSEA = 0.509. For the two-factor model, χ^2 = 16.58, *df* = 7; $\Delta\chi^2(1)$ = 626.08, $p < .001$; CFI = 0.99, NNFI = 0.99, SRMR = 0.024, RMSEA = 0.067. These results indicated that the two types of voice are distinguishable from each other.

Insert Table 1 and 2 about here

We tested our hypotheses by first performing multilevel polynomial regression (Wong & Giessner, 2018; Jansen & Kristof-Brown, 2005). Results from HLM analyses, as shown in Table 3, indicated significant moderating effect of leader group prototypicality on the relation between LMX (dis)similarity and prohibitive voice, as the model fit significantly improved from Model 3a to Model 4a ($\Delta\chi^2[5] = 17.44$, $p < .01$). For promotive voice, the moderating effect was not significant, as the model fit improved only modestly from Model 3b to Model 4b ($\Delta\chi^2[5] = 10.21$, $p < .10$).

Insert Table 3 about here

Next, we used response surface method to plot the patterns of the moderating effect on prohibitive voice (see Figure 2). Hypothesis 1a/b suggests that as the leader is perceived to be more group prototypical, LMX similarity is more positively related to voice. As depicted in Figure 2, for prohibitive voice, when leader group prototypicality is high, the surface

along the dissimilarity line (LMXS = -LMXO) is an inverted U shape, and the degree of prohibitive voice is higher along the similarity line (LMXS = LMXO) than along the dissimilarity line. Moreover, response surface feature testing revealed that the curvature along the dissimilarity line is significantly negative (a_4 = -0.50, 95% CI = [-2.22, -0.46], see Table 4). That is, with a highly prototypical leader, as LMXS deviated from LMXO, followers exhibited decreased prohibitive voice; as LMXS was perceived to be similar to LMXO, followers engaged in more prohibitive voice. Thus, Hypothesis 1a was supported.

Insert Figure 2 and Table 4 about here

Next, we plotted the response surface of the moderating effect on promotive voice (see Figure 3), and tested relevant features as we did for prohibitive voice. When leader group prototypicality was high, as revealed by comparing Figure 2 to Figure 3, the pattern of prohibitive voice was similar to that of promotive voice in a sense that the surface along the dissimilarity line (LMXS = -LMXO) was an inverted U-shaped one, and that the degree of voice behavior was higher along the LMX similarity line (LMXS = LMXO) than along the dissimilarity line. However, for promotive voice, the curvature along the dissimilarity line was not significantly negative (a_4 = -0.52, 95% CI = [-1.56, 0.24], see Table 4), indicating that with a highly prototypical leader, the proposed effect of LMX similarity on upward promotive voice was not significant. Thus, Hypothesis 1b was not supported.

Insert Figure 3 about here

Hypothesis 2a/b posits that as a leader is perceived to be less group prototypical, a follower is more likely to exhibit leader-directed prohibitive and promotive voice when one's own LMX is higher than coworkers' LMX relationships. As illustrated in Figure 2, when leader group prototypicality is low, along the dissimilarity line (LMXS = -LMXO), the linear slope at the point LMXS = 0 was significantly positive (a_3 = 0.58, 95% CI = [0.20, 2.04], see Table 4). More specifically, the degree of prohibitive voice increased from the left lower corner (LMXS = -3 and LMXO = 3) to the right upper corner (LMXS = 3 and LMXO = -3). That is, a higher level of voice behavior appeared in the area where one's own LMX is higher than coworkers' LMX relationships (i.e., LMXS > LMXO). Hence, Hypothesis 2a was supported.

Under the condition of low leader group prototypicality, as indicated by comparing Figure 2 to Figure 3, the pattern of prohibitive voice was different from that of promotive voice in that along the LMX dissimilarity line (LMXS = -LMXO) there was a linear increase in prohibitive voice from the left lower corner (LMXS = -3 and LMXO = 3) to the right upper corner (LMXS = 3 and LMXO = -3), but not so for promotive voice. Moreover, for promotive voice, the proposed positive linear slope along the dissimilarity line was not significant (a_3 = 0.34, 95% CI = [-0.28, 0.89], see Table 4). Thus, with a less prototypical leader, positive LMX dissimilarity would not lead to increased promotive voice. Accordingly, Hypothesis 2b was not supported.

To test Hypothesis 3, we compared the difference in the curvature along the dissimilarity line between the two types of voice under the condition of high leader group prototypicality with bootstrapping. The result showed no significant difference ($\Delta a_4 = 0.02$, 95% CI = [-0.67, 0.21]). Integrating prior analyses, the results suggested that with a highly group prototypical leader, LMX similarity was more likely to bring about prohibitive voice than LMX dissimilarity, but not so for promotive voice; however, the effect of LMX similarity on the two forms of voice did not significantly differ. Thus, Hypothesis 3 was not supported.

To test Hypothesis 4, we compared the difference in the linear slope along the dissimilarity line between the two types of voice under the condition of low leader group prototypicality with bootstrapping. The result revealed significant difference ($\Delta a_3 = 0.24$, 95% CI = [0.05, 1.76]), indicating that as leader was viewed less prototypical leader, LMX positive dissimilarity (i.e., LMX self > LMX others) was more likely to result in prohibitive voice than LMX negative dissimilarity (i.e., LMX self < LMX others), but not so for promotive voice. That is, the difference in the effect of LMX positive dissimilarity on the two types of voice was significant. This supported Hypothesis 4.

DISCUSSION

We proposed a social identity perspective on LMX (dis)similarity and leader-directed voice that holds that, contingent on leader group prototypicality, not only LMX positive dissimilarity (the "traditional" LMX perspective) but also LMX similarity (the perspective uniquely informed by the social identity analysis) may motivate voice. We further argued that these interactive influences of LMX (dis)similarity and leader group

prototypicality would be stronger for prohibitive voice than for promotive voice. The pattern of results is in line with these predictions even when not all hypothesis tests were significant. The interactive influence of LMX (dis)similarity and leader group prototypicality was significant for prohibitive voice, and the dissimilarity effect was stronger for prohibitive voice than for promotive voice. The interactive effect was not significant for promotive voice, however, and the similarity effect did not differ significantly between prohibitive and promotive voice. The fact that the interaction was significant for prohibitive voice but not for promotive voice is consistent with the prediction that the effect would be stronger for prohibitive voice, but we should note that we expected the effect for promotive voice too and the test of the difference in effect strength was expected to be significant for the similarity effect too. We thus draw the conclusion that there is support for our prediction for prohibitive voice, and partial support for the prediction that this effect is stronger than for promotive voice, but no evidence that the effect obtains for promotive voice too. In the following, we discuss the theoretical and practical implications of our findings.

Theoretical Implications

The primary contribution of our study lies in establishing the validity of a social identity perspective on the relationship between LMX (dis)similarity and voice. The study of LMX (dis)similarity revolves around the recognition that an LMX relationship is typically embedded in a context of other LMX relationships. Arguably, the study of LMX differentiation or relative LMX has been the most important development in LMX research since the inception of the theory. However, earlier work on relative LMX

could be understood as a direct extrapolation of the traditional dyadic perspective that did not recognize the social identity implications of the context in which an LMX relationship is embedded. The present analysis thus is an important conceptual development in the study of LMX (dis)similarity in recognizing the social identity implications of LMX similarity and LMX positive dissimilarity. Importantly, this not only yields an account of the effects of LMX positive dissimilarity that is consistent with earlier work in LMX differentiation (even when it qualifies these conclusions in the moderating role of leader group prototypicality), but also advances our understanding of LMX (dis)similarity with the insights that LMX similarity is associated with collective identity and therefore may motivate voice. Moreover, the social identity perspective allows us to identify leader group prototypicality – a factor uniquely associated with the social identity perspective – as a moderator of the influence of LMX similarity (high prototypicality) versus LMX positive dissimilarity (low prototypicality).

In the state of the science in voice research, prohibitive voice is distinguished from promotive voice (Liang et al., 2012; Lin & Johnson, 2015; Wei et al., 2015), and we relied on this distinction to further develop our analysis in terms of the motivating potential of LMX similarity and positive dissimilarity. Results were in important part, but not completely, supportive of the notion that the motivating potential of LMX (dis)similarity is stronger for prohibitive voice. These findings do not just underscore the value of making the prohibitive-promotive voice distinction, but also corroborate our analysis in terms of the social influence following from LMX (dis)similarity (i.e., as per the argument that prohibitive voice is

more dependent on such influence). Indeed, one reading of the absence of a significant effect for promotive voice is directly in line with our conceptual analysis: the threshold to engage in promotive voice is so low that identity-based motivation and associated expectations of leader openness either have no influence on promotive voice or have an effect that is too weak to be established in our empirical analysis.

Because of the importance of leader-directed voice and the role of LMX in leader-directed voice, our analysis zoomed in on the link between LMX (dis)similarity and voice. Conceptually, however, there is no reason why our analysis would be limited to this relationship. The motivating potential of collective and relational identity as it flows from LMX similarity and positive dissimilarity respectively may also hold for other positive outcomes than voice, and other influences on collective and relational identity may likewise motivate voice. Alternative outcomes such as citizenship and performance may be less associated with social risk, however, and thus may potentially be less contingent on such leader characteristics as leader group prototypicality. That is, even when there may be an interactive influence similar in nature, it may be weaker for some of these other outcomes than for voice. Put differently, one conclusion from our differential findings for promotive and prohibitive voice is that it may be worthwhile to more broadly study how LMX (dis)similarity and leader group prototypicality may have relationships with other outcomes that are similar in nature but differ in strength. Another take-away is that our analysis suggests that relationships were driven by the salience of collective and relational identity and therefore these relationships need not be unique to LMX (dis)similarity. Other influences

on social identity could similarly motivate voice (contingent on leader group prototypicality). Obviously, these are propositions for future research to evaluate, but they are propositions that underscore the far-reaching implications of the social identity perspective we propose.

In this respect, we may highlight one other implication. We have advanced our analysis by throwing light on possible individual differences. The social identity perspective linking LMX similarity to collective identity and LMX positive dissimilarity to relational identity allows us to link these insights to the observation that some people are more prone to form a sense of collective identity whereas others are more prone to form a sense of relational identity (Brewer & Gardner, 1996; Mael & Ashforth, 1995). A further proposition for future research thus could be that such dispositional differences in social identity may moderate responses to LMX (dis)similarity such that some people respond more favorably to LMX similarity whereas others respond more favorable to LMX positive dissimilarity.

Practical Implications

An important insight from earlier work on LMX (dis)similarity was also arguably somewhat disappointing for practice: LMX positive dissimilarity motivates positive behavior. By implication this means that LMX negative dissimilarity discourages positive behavior, and an unfortunate reality is that LMX positive dissimilarity for the one can only be achieved at the expense of LMX negative dissimilarity for the other (objectively speaking at least; subjectively it is possible, although perhaps unlikely, that all would believe they have a better relationship with their leader than others). That is, from a practical point of view, the implication

of the motivating potential of LMX positive dissimilarity is that achieving a positive outcome for one team member – voice – would be at the expensive of achieving that outcome for another team member. Especially for voice this is an undesirable state of affairs, because teams potentially benefit from having diversity in voice and having all members be heard (cf. Tröster & van Knippenberg, 2012).

From a practical perspective, the findings for LMX similarity thus offer an important counterpoint to this more disappointing conclusion. Motivating voice through LMX similarity implies voice by all team members. Initial work on LMX may have suggested that LMX differentiation is what typically occurs (Dansereau et al., 1975), but it is important to realize that while this may have been a conceptual suggestion, the actual evidence in research in LMX (dis)similarity – including but not limited to the current study – shows that LMX similarity does occur in practice, and prominent enough to establish the current relationships. In seeking to foster voice, an important focus would thus seem to be not just to develop high-quality relationships, but also to develop relationships of equal quality with all team members. The moderating role of leader group prototypicality shows that such efforts would need to be complemented by establishing oneself as a group prototypical leader. Research has shown qualitatively that leaders may achieve such perceptions through the way they present themselves (Reicher & Hopkins, 2003); leader group prototypicality thus is not given but something leaders can actively shape. From the perspective of key take-aways, then, the present analysis shifts our understanding of LMX (dis)similarity in two important ways: it points to the effectiveness of LMX similarity, and it points to the fact that the

effectiveness of the LMX relationships one develops as a leader is contingent on how one presents oneself in terms of group prototypicality – relationship development alone is insufficient.

Limitations, Strengths, and Future Directions

Despite the important theoretical insights and practical implications above, the present study has a few limitations that should be considered in future research endeavors. First, conceptually LMX similarity and LMX positive dissimilarity are closely aligned with collective identity and relational identity respectively, and the prosocial motivation that is associated with social identity is well-established. We do not empirically show, however, that collective identity and relational identity or associated identity-based motivation mediate the influence of LMX similarity and LMX positive dissimilarity. We readily acknowledge that any study presents a stronger empirical case when more of the proposed mediating mechanisms are empirically established. That said, we would argue that in this particular case, this is less of an issue than with many other studies. The reason is that the linkage between similarity and collective identity is so definitional that it is a very reasonable assumption that all other things being equal greater LMX similarity implies more salient collective identity; in a related vein, relational identity implies and is defined by a strong and significant interpersonal relationship, and all other things being equal more LMX positive dissimilarity should imply stronger relational identity based on the positive leader-follower relationship. Likewise, the relationship between social identity and identity-based motivation is well-established. Whereas this is not to deny the value of future research more directly mapping the influence of collective and relational identity, we thus believe

there are strong conceptual grounds to have confidence in the current conclusions.

Second, we observed a relatively low proportion of variance in promotive voice explained by the group membership, as indicated by low ICCs. This may be reflective of the same issues underlying the absence of an interactive effect on promotive voice. As we discussed above, it is in line with our conceptual analysis and the broader voice literature to expect promotive voice to be less contingent on social influences than prohibitive voice. We outlined above how this may explain the absence of a significant interaction for promotive voice. It may also explain the lower ICCs, because the ICCs would be driven by the shared influence of LMX (dis)similarity and leader group prototypicality; as this influence is weaker or absent, ICCs would also be lower.

Third, we conducted our study in China, which would invite a question about the extent to which our findings can be extended to other cultural contexts. Prior research suggested that a high level of power distance and an emphasis on harmonious relationship were negatively related to voice behavior (e.g., Friedman, Chi, & Liu, 2006). In China, where harmony and unity is widely valued, voice behavior may be implicitly seen as socially undesirable (Farh, Zhong, & Organ, 2004). One could thus speculate that the predicted relationships would be harder to detect in China, or alternatively that because of these cultural influence effects would actually be stronger in China because voice would be more contingent on social influences. The current study cannot speak to this, but it is important to recognize that our conceptual analysis is rooted in research that is not unique to China. The LMX (dis)similarity perspective

has been more broadly established, as has the social identity perspective in general and the focus on leader group prototypicality specifically (e.g., van Knippenberg, 2011), and the distinction between promotive and prohibitive voice likewise is not tied to the Chinese contexts. The broader international basis of our analysis would thus give some confidence that the observed relationships are not unique to the Chinese context, even when it may be a valuable direction for future research to explore whether there are cultural moderators of the strength of these relationships.

Last, the sample we chose is focused on the industry involving bridge/railway construction, and thus invites the question of generalizability of our findings to other industries. Construction requires vigilance, accuracy, and error detection. All these potentially make people prevention-focused (Van Dijk & Kluger, 2011), which would result in more prohibitive voice than promotive voice (Lin & Johnson, 2015). Whereas this may affect relative levels of prohibitive and promotive voice vis-à-vis other industries, it is less obvious that it would affect the interaction patterns that were the core concern of our study. Even so, future research developing this perspective further in other industries would be worthwhile to get a better sense of possible industry effects.

CONCLUSION

In sum, proposing a social identity perspective on the LMX (dis)similarity – voice relationship, we find that whether LMX similarity or LMX positive dissimilarity results in leader-directed voice depends on the degree to which the leader is perceived to be representative of the team. Moreover, employees are more sensitive to these social influences when raising prohibitive voice than when raising promotive voice. Leaders need

to balance two factors to increase follower voice: their treatment towards their team members and the degree to which they are perceived to embody the group identity. We hope that our written voice will move upward to the leaders who are open to encourage and embrace employee voice.

TABLE 1

Means, Standard Deviations, and Inter-correlations among Variables[a]

Variable	Mean	S.D.	1	2	3	4	5	6	7	8
1. Team Type	0.77	0.42								
2. Age Similarity	6.85	12.06	-.06							
3. Gender Similarity	0.32	0.47	.27**	.14*						
4. LMXS	3.84	1.11	-.11	.03	-.24**	(.88)				
5. LMXO	4.04	1.05	-.16**	.03	-.15**	.76**	(.91)			
6. LGP	4.39	1.11	-.11*	-.01	-.11*	.46**	.54**	(.88)		
7. Promotive Voice	4.86	1.21	-.10	-.05	-.03	.03	-.03	-.05	(.91)	
8. Prohibitive Voice	4.05	1.39	-.22**	-.04	-.14*	.17**	.12*	.04	.67**	(.89)

[a] $n = 321$. Reliability coefficients (Cronbach's alpha) for each measure are provided in parentheses on the diagonal.

LMXS = leader-member exchange self; LMXO = leader-member exchange others; LGP = leader group prototypicality.

* $p < .05$; ** $p < .01$. Two-tailed tests.

TABLE 2
Model Fit Results of Confirmatory Factor Analyses[a]

Models	χ^2	*df*	$\Delta\chi^2(\Delta df)$	CFI	NNFI	SRMR	RMSEA
1. Five-factor model (two types of voice, LMXS, LMXO, LGP)	829.33	332		0.97	0.96	0.066	0.070
2. Four-factor model (two types of voice are combined)	1006.72	336	177.39(4)	0.96	0.95	0.078	0.081
3. Four-factor model (LMXS and LMXO are combined)	1102.96	336	273.63(4)	0.95	0.95	0.073	0.087
4. Four-factor model (LMXS and LGP are combined)	1988.53	336	1159.20(4)	0.93	0.92	0.145	0.127
5. Four-factor model (LMXO and LGP are combined)	1740.37	336	911.04(4)	0.93	0.91	0.084	0.117
6. Two-factor model (LMXS, LMXO, and LGP are combined into one factor; two types of voice are combined into the other factor)	2181.18	341	1351.85(9)	0.90	0.88	0.098	0.133
7. Single-factor model	6351.17	342	5521.84(10)	0.79	0.75	0.339	0.240

[a] $n = 321$. All alternative models were compared with the hypothesized five-factor model. All $\Delta\chi^2$'s are significant at $p < .001$.
Abbreviations: CFI is the comparative fit index; NNFI is the non-normed fit index; SRMR is the standardized root-mean-square residual; RMSEA is the root-mean-square error of approximation.

TABLE 3
Results of Multilevel Polynomial Regression on Voice Behavior[a]

Variables	Prohibitive Voice								Promotive Voice							
	Model 1a		Model 2a		Model 3a		Model 4a		Model 1b		Model 2b		Model 3b		Model 4b	
Intercept	4.53**	(.22)	4.53**	(.20)	4.62**	(.20)	4.62**	(.19)	5.04**	(.21)	5.07**	(.20)	5.11**	(.21)	4.92**	(.20)
Level-2 Variable																
Team Type	-0.67*	(.29)	-0.61*	(.28)	-0.62*	(.27)	-0.53*	(.22)	-0.25	(.24)	-0.20	(.24)	-0.20	(.25)	0.06	(.22)
Level-1 Variables																
Age Similarity	-0.02†	(.01)	-0.01†	(.01)	-0.02*	(.01)	-0.02*	(.01)	-0.01	(.01)	-0.01	(.01)	-0.01	(.01)	-0.01†	(.01)
Gender Similarity	0.16	(.17)	0.22	(.17)	0.20	(.17)	0.15	(.16)	0.12	(.18)	0.20	(.19)	0.25	(.19)	0.19	(.18)
LMXS			0.07	(.07)	0.08	(.07)	0.09	(.09)			0.04	(.09)	0.01	(.08)	-0.02	(.10)
LMXO			-0.04	(.07)	0.04	(.07)	-0.06	(.10)			-0.09	(.10)	-0.01	(.11)	0.04	(.14)
$LMXS^2$			-0.08†	(.05)	-0.12*	(.05)	-0.13*	(.05)			-0.06	(.05)	-0.08	(.05)	-0.08	(.05)
LMXS×LMXO			0.02	(.05)	0.06	(.05)	0.03	(.10)			0.06	(.08)	0.11	(.08)	0.15	(.14)
$LMXO^2$			0.02	(.06)	-0.00	(.06)	-0.06	(.08)			-0.06	(.09)	-0.08	(.09)	-0.15	(.13)
LGP					-0.14*	(.07)	-0.26**	(.08)					-0.12	(.08)	-0.21**	(.07)
LGP×LMXS							-0.18*	(.07)							-0.19†	(.11)
LGP×LMXO							0.22**	(.07)							0.17	(.10)
$LGP \times LMXS^2$							-0.04†	(.02)							-0.01	(.02)
LGP×LMXS×LMXO							0.19**	(.04)							0.09	(.06)
$LGP \times LMXO^2$							-0.03	(.04)							-0.02	(.05)
Model Deviance (χ^2)	1024.95		1014.85		1007.46		990.02		1031.24		1000.24		994.09		983.88	
$\Delta\chi^2$			10.10†		7.39**		17.44**				31.00**		6.15*		10.21†	

[a] $n = 321$. LMXS is leader-member exchange self; LMXO is leader-member exchange others; LGP is leader group prototypicality. The standard errors in the estimations are reported in parentheses. Model Deviance is a measure of model fit, defined as -2 × the log-likelihood of the maximum-likelihood estimate; the smaller the model deviance, the better the model fit.

† < .10; * $p < .05$; ** $p < .01$.

TABLE 4

Tests of Response Surfaces along Similarity Line and Dissimilarity Line at High and Low Levels of Leader Group Prototypicality[a]

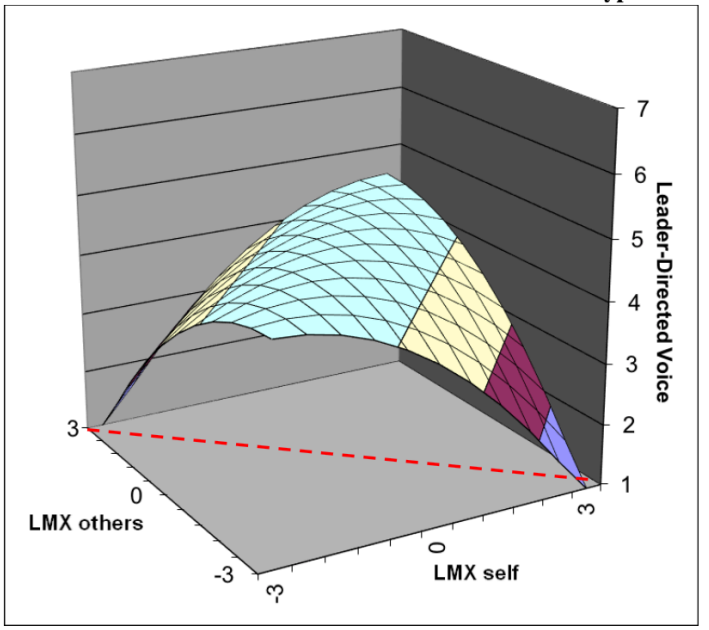
Dependent Variable	Level of Leader Group Prototypicality	LMXS = LMXO (Similarity Line)				LMXS = -LMXO (Dissimilarity Line)			
		q_{slope} (a_1)	95% CI	$q_{curvature}$ (a_2)	95% CI	q_{slope} (a_3)	95% CI	$q_{curvature}$ (a_4)	95% CI
Prohibitive Voice	Low	-0.01	[-0.32, 0.16]	-0.29*	[-0.60, -0.22]	0.58*	[0.20, 2.04]	0.06	[-0.33, 0.72]
	High	0.07	[-0.22, 0.19]	-0.03	[-0.18, 0.07]	-0.30*	[-1.41, -0.28]	-0.50*	[-2.22, -0.46]
Promotive Voice	Low	0.04	[-0.13, 0.48]	-0.14*	[-0.31, -0.01]	0.34	[-0.28, 0.89]	-0.26*	[-1.33, -0.02]
	High	-0.01	[-0.23, 0.12]	-0.02	[-0.11, 0.12]	-0.46*	[-2.01, -0.26]	-0.52	[-1.56, 0.24]

[a] $n = 321$. 95% bias-corrected confidence intervals were produced from 10,000 bootstrapped estimates.

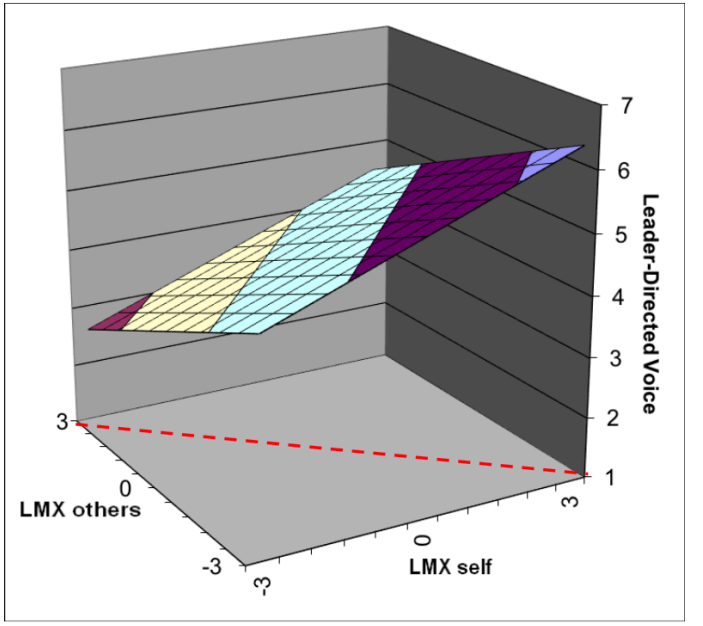
Values for Prohibitive Voice and Promotive Voice represent the linear slope and curvature of the response surfaces displaying the interactive effect of LMX (dis)similarity and leader group prototypicality.

* $p < .05$. One-tailed tests.

FIGURE 1
Hypothesized Surface Plots



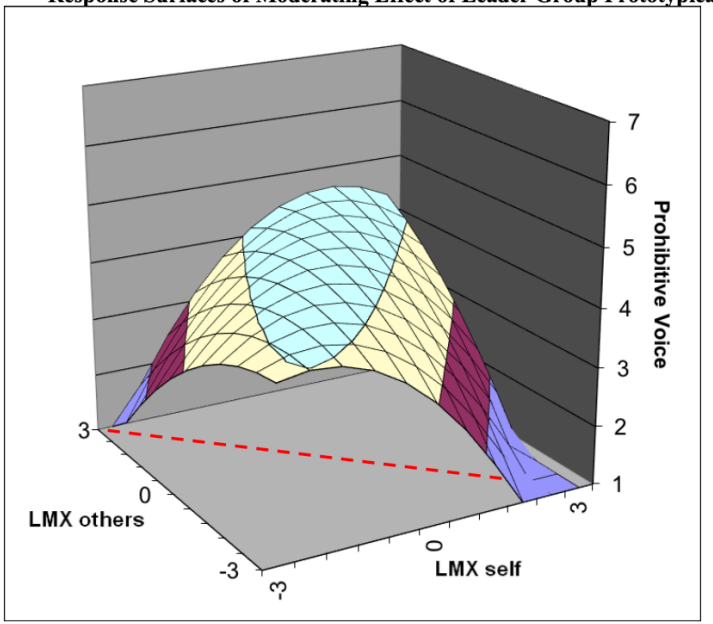
High Leader Group Prototypicality



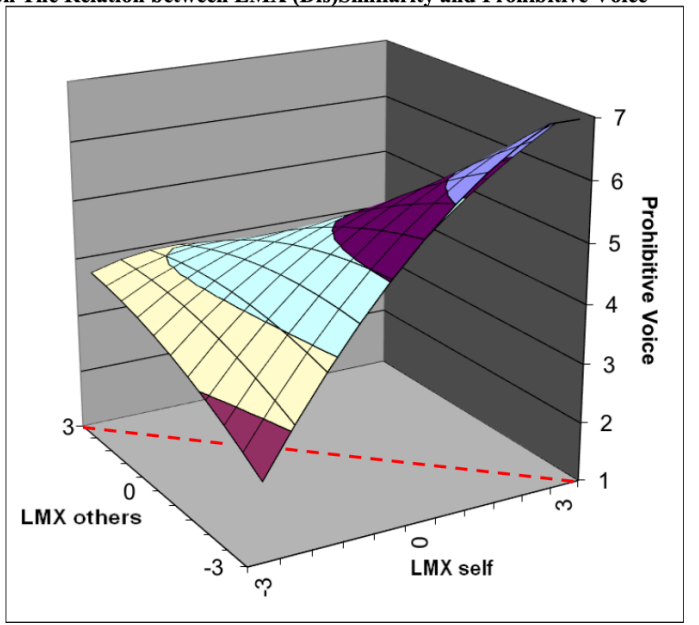
Low Leader Group Prototypicality

FIGURE 2

Response Surfaces of Moderating Effect of Leader Group Prototypicality on The Relation between LMX (Dis)Similarity and Prohibitive Voice

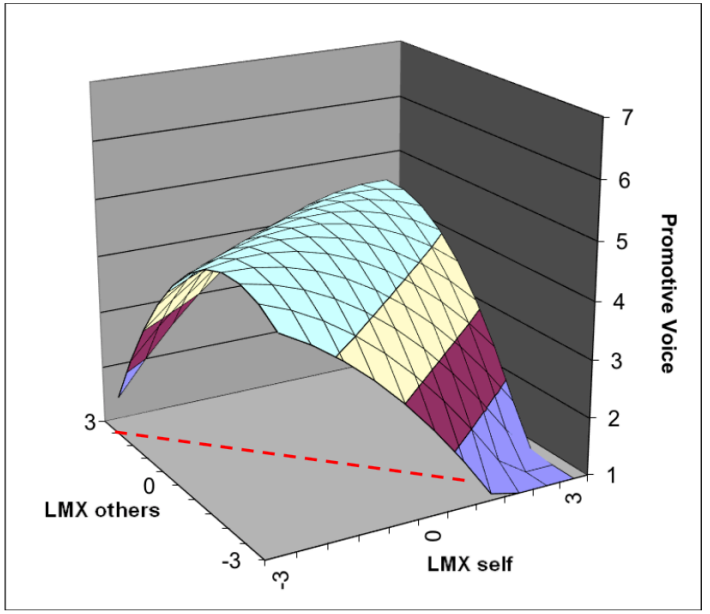


High Leader Group Prototypicality

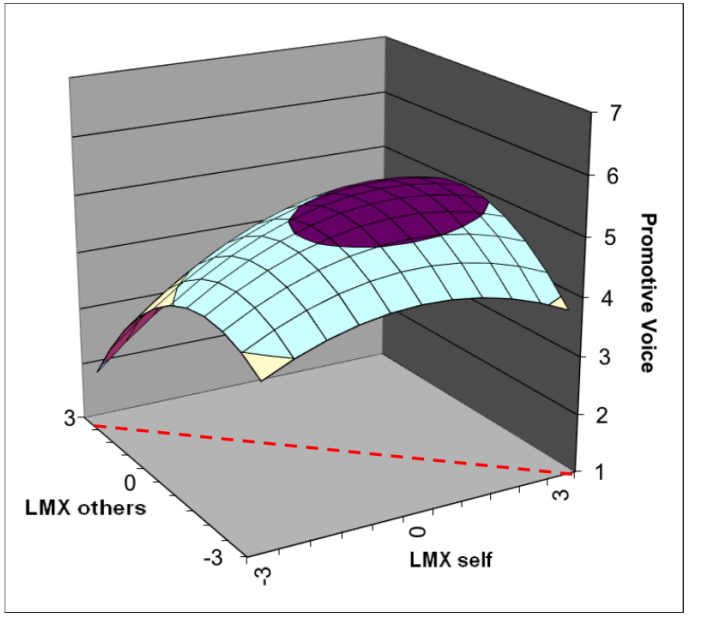


Low Leader Group Prototypicality

FIGURE 3
Response Surfaces of Moderating Effect of Leader Group Prototypicality on The Relation between LMX (Dis)Similarity and Promotive Voice



High Leader Group Prototypicality



Low Leader Group Prototypicality

CHAPTER 3

How Cross-Expertise Voice Facilitates Team Performance: A Relational Energy Perspective

INTRODUCTION

Voice behavior refers to the expression of suggestions or ideas to improve collective functioning (Van Dyne & LePine, 1998). In a team where team members have diverse expertise backgrounds, raising voice is an important channel for the team members to utilize their diverse expertise. Prior research has recognized that voice from team members could bring about desired team outcomes (Detert, Burris, Harrison, & Martin, 2013; Li, Liao, Tangirala, & Firth, 2017; Liang, Shu, & Farh, 2019). These studies have focused on the volume of voice, assuming implicitly that influences of voice were exerted on the team as a whole. However, voice might be better understood as being communicated to one or a few, not necessarily all, team members. This points to the necessity of studying who voice to whom in teams. Team members might differ in the target whom they voice to, depending on the in-group vs. out-group distinction based on interpersonal dissimilarity. Whether voice occurs between similar or dissimilar team members might affect the effectiveness in communicating ideas to others. Hence, we expect that the degree to which voice flows across a social category boundary within a team could exert an influence above and beyond the volume of voice. In teams where team members are diverse in expertise background, it would be of particular importance to study the cross-expertise voice (i.e., the voice

behavior that occurs between the dyads whose expertise backgrounds are different) and its impact on team process and effectiveness.

Working in a team diverse in expertise background, employees inevitably need to collaborate with each other to achieve collective task goals through utilizing their expertise. Prior research on expertise diversity has shown that working in a team that is diverse in expertise or knowledge enables people to know different ways of doing things, broaden their scope of knowledge, and consequently realize the benefits of informational diversity for the team (e.g., Dahlin, Weingart, & Hinds, 2005; Homan, van Knippenberg, van Kleef, & De Dreu, 2007; Jehn, Northcraft, & Neale, 1999). Despite these advantages, people may encounter difficulties in communicating with the team members who have different expertise or knowledge backgrounds, which stands in the way of turning the expertise diversity into team effectiveness. To provide a solution for this problem, we emphasize cross-expertise voice as a critical means to unlock the potential of the wide-ranging pool of knowledge and investigate how and when cross-expertise voice could facilitate team performance.

When voice flows around the team members of different expertise backgrounds that imply different ways of approaching problems and thinking of solutions, this could give rise to the obstacles of communication within the team (Edmondson, 2003). To overcome the difficulty in communicating with expertise-dissimilar others, it is of importance to create excitement or energy for them when voicing ideas to them. Being excited or energized, people are more likely to buy into the ideas and mobilized to act upon them; as a consequence, the raised ideas would be transformed into substantial actions and improved team performance. As

such, through fostering relational energy (i.e., energy that transfers from another person toward the accomplishment of work tasks; Owens, Baker, Sumpter, & Cameron, 2016) in a team, cross-expertise voice is likely to benefit team performance.

Environmental uncertainty captures the unpredictability of change in the external environment (Dess & Beard, 1984; Garg, Walters, & Priem, 2003) confronting teams. It influences how teams behave within the environment. Human beings have a basic need to reduce uncertainty (Pratt, 1988). Identifying with a social category can help an individual to reduce perceived uncertainty (Hogg & Terry, 2000). When environment is more uncertain, individuals are inclined to rely more on group membership in order to reduce uncertainty; as a result, they tend to be more biased against dissimilar others and thus less likely to positively approach their ideas and opinions. Hence, we predict that when environmental uncertainty is lower rather than higher, voice from expertise-dissimilar members is more likely to benefit team performance by creating relational energy in the team, because team members would feel less a need to reduce the uncertainty and thus be more open-minded to the voice raised by team members who have different expertise backgrounds. Figure 1 presents our conceptual model.

Insert Figure 1 about here

Drawing upon relational energy theory (Owens et al., 2016) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), the current study makes theoretical contributions in three major aspects. First, casting light on who voices to whom in teams, we highlight that

cross-expertise voice, or the voice flowing around team members who differ in expertise, has a unique impact for teams above and beyond the volume of voice. We have recognized that the cross-expertise voice could facilitate team performance while taking into account the effect of the volume of voice. Second, identifying relational energy as a mediation mechanism, we advance our understanding of the mechanism through which voice could result in positive influences within a team. Though extant studies have emphasized the role of cognitive mechanism in driving desirable outcomes of voice (e.g., Edmondson, 1999; Li et al., 2017; Liang et al., 2019), it might require more than that to get one's ideas through to (dissimilar) others. Relative to cognitive mechanism, motivational mechanism could serve a unique role in getting people to buy into raised ideas and thus mobilizing team members to take actions. Third, focusing on the very reason why people may find it difficult to foster relational energy among dissimilar others – social categorization – we identify environmental uncertainty as a condition under which cross-expertise voice is more likely to enhance team performance via relational energy. By considering environmental uncertainty, we highlight the influence of business environment confronting teams when they attempt to take advantage of their members' ideas or opinions.

THEORY AND HYPOTHESES

Cross-Expertise Voice

Voice behavior is defined as the expression of constructive work-related ideas aimed at improving collective functioning (Van Dyne & LePine, 1998). There has been research showing that team members' voice could result in positive team outcomes such as team learning (Edmondson,

1999), team innovation (Liang et al., 2019), and team performance (Li et al., 2017). These studies have focused on the volume of voice in a team, but paid little attention to who voice to whom within a team and whether voicer and the target who received that voice are similar or not on a certain dimension of social category. With the volume of voice being equal, it might still matter whether voice is directed to a target who is an out-group member defined by self-categorization. We thus anticipate that the extent to which voice that happens between a dyad who belong to different social categories within a team would have an influence above and beyond the volume of voice. In knowledge-intensive teams in which team members differ in their expertise background, it would be particularly important to shed light on the voice that occurs between the dyads who have dissimilar expertise backgrounds (or cross-expertise voice) and investigate how such voice influences team performance.

In expertise-diverse teams, team members need to work with one another so as to fulfill task goals. Prior research on team expertise diversity has revealed that working with those who have different expertise or knowledge background one is likely to be exposed to different approaches of doing things, broaden one's scope of knowledge, and consequently realize the potential of informational diversity (e.g., Dahlin et al., 2005; Homan et al., 2007; Jehn et al., 1999). Nevertheless, it is difficult to get one's idea through to those who have different expertise background, because of the cognitive gap that prohibits them from comprehending the viewpoints and underlying rationale. To address this challenge, the current study focuses on cross-expertise voice as a critical solution and attempts to

investigate when and how the cross-expertise voice would benefit team performance.

Relational Energy Theory

In the extant literature regarding human energy at work, researchers have made remarkable attempts to understand what creates energy in organizations and how to maintain high-quality relationships in the workplace (e.g., Cole, Bruch, & Vogel, 2012; Cross, Baker, & Parker, 2003; Dutton, 2003; Quinn, Spreitzer, & Lam, 2012). Among this literature, relational energy theory (Owen et al., 2016) focuses on the energy derived from interpersonal or relational experience. Relational energy refers to a heightened level of motivation, vitality, and vigor generated from interpersonal interactions that increases a person's capacity for action (Quinn et al., 2012), motivating him or her to accomplish one's work (Owens et al., 2016). Relational energy captures the degree to which people feel energized through interpersonal interaction. Such interaction would give rise to motivational arousal or the generation of feelings of motivation, which is key to increasing one's capacity to do work. The current study treats relational energy as a team-level concept such that team relational energy is an aggregation of dyadic relational energy within a team.

Prior research has identified three critical means by which people could feel energized, including cognitive stimulation, positive affect, and behavioral modeling (Cole et al., 2012; Owens et al., 2016). Specifically, when a colleague could provide cognitive stimulation, instill positive affect, and serve as a behavioral model for others, he or she would function as a relational energizer who made others feel as if they could invest more efforts, perform better at work, or be mobilized to keep up the hard work

(Owens et al., 2016). In a nutshell, such interpersonal interaction results in motivational arousal towards others' capability to accomplish work.

With a focus on the influence of energizers in communicating ideas to others, Cross and Parker (2004) identified a few critical characteristics that energizers typically share. First, they are able to convey a compelling vision or goal that is worthy of others' time and effort to pursue but not overwhelming. As an energizer animates colleagues with such a compelling vision through conversation, he or she could create enthusiasm for them. Second, often times, energizers signal a strong sense of engagement through conversation, which could motivate others to engage in suggested actions as well. This is because energy is likely to accrue as people hear the insights from another person who is similarly engaged. Third, energizers are usually able to create such a belief for others that the ideas can succeed. People allow themselves to be excited or energized when they come to believe that the vision or goal being established in a conversation is worthy and attainable. Possessing these characteristics above, energizers are capable of getting others to buy into and act upon their raised ideas through generating enthusiasm and excitement for them.

Cross-Expertise Voice and Relational Energy

When voice flows across the team members who have different expertise backgrounds, it is likely to get each other energized and motivated to fulfil the prospect of future by making changes. First, the raised ideas may provide cognitive stimulation to a coworker, particularly when the shared ideas sound novel, useful, and interesting (Paulus & Yang, 2000). Second, listening to constructive suggestions might arouse positive affect. The coworker would feel excited when hearing an inspiring work-related

suggestion from a focal employee, so that the coworker may be motivated to join the focal employee to act upon the proposed suggestion. Third, hearing inspiring ideas from the focal employee, the coworker may regard him or her as a role model who engages in proactive behavior (Grant & Ashford, 2008; Parker & Collins, 2010), and subsequently be mobilized to also work harder. As previously stated, cognitive stimulation, positive affect, and behavioral modeling are three critical factors that would help foster relational energy. Hence, when there is more voice that happens between the dyads who have different expertise backgrounds, it is likely to create more relational energy within a team. We thus propose Hypothesis 1.

Hypothesis 1. Cross-expertise voice is positively related to team relational energy.

Cross-Expertise Voice on Team Performance via Relational Energy

Research on the consequences of voice has implied that raised ideas exert positive influences within a team basically through cognitive mechanism (e.g., Edmondson, 1999; Li et al., 2017; Liang et al., 2019). For raised ideas to be translated into substantial change, however, cognitive mechanism might not be sufficient. Sometimes it happens that one would agree that an idea one's colleague brought up was smart, but not be motivated to act upon the idea. This points to an important omission – motivational activation – a more proximal drive for making changes implied in raised voice. Hence, we propose that relational energy could function as such a motivational mechanism that helps translate ideas into substantial change and subsequently facilitates team performance.

Prior research has revealed that relational energy or energizing relationship would lead to desirable work-related outcomes such as higher

individual work performance (Cross & Parker, 2004), increased perception of individual proactive performance (Cullen-Lester, Leroy, Gerbasi, & Nishii, 2016), and enhanced knowledge transfer in organizations (Casciaro & Lobo, 2008). Extending these findings to the effect of relational energy on team outcomes, we predict that cross-expertise voice is likely to facilitate team performance by creating relational energy within the team.

Hypothesis 2. Cross-expertise voice is positively related to team performance via team relational energy.

Environmental Uncertainty as a Moderator

Human beings have a basic need to reduce uncertainty (Pratt, 1988). It manifests an individual's need for order in a social environment and relates to how an individual defines one's self-concept. When identifying with a social category, an individual would be more certain about what to expect from and how to react to the environment in which the individual is situated (Hogg & Terry, 2000). Being exposed to uncertainty, people would tend to rely on social categorization and form identification with an in-group in order to reduce uncertainty, because self-categorization can make people assimilate oneself to a prototype that prescribes perceptions, attitudes, and behaviors (Hogg & Terry, 2000). Hence, a high level of perceived uncertainty may render group categorization salient and in turn make focal individuals less friendly or less open-minded to out-group members; such intergroup bias would result in difficulties and barriers of communication between the groups (van Knippenberg, De Dreu, & Homan, 2004).

Teams are influenced by business environment in which they are embedded. The environmental uncertainty, referred to as the

unpredictability of change in the external environment (Dess & Beard, 1984; Garg et al., 2003). A high level of environmental uncertainty which teams are typically confronted with can be captured by the pace at which internal models of production or service need to change and the degree to which competitor's actions are predictable. These factors particularly influence how entities behave within the environment. When environmental uncertainty that people are facing is high, they might tend to be less open-minded to the ideas and opinions from dissimilar others. This is because, as articulated above, high environmental uncertainty would likely trigger their sense of group membership and intergroup bias, which subsequently make the focal member less likely to appreciate the ideas from expertise-dissimilar members. In contrast, when environmental uncertainty is perceived to be low, people might tend to be more open-minded and thus more likely to embrace and feel energized by cross-expertise voice. We therefore propose Hypothesis 3.

Hypothesis 3. Cross-expertise voice and environmental uncertainty interact to affect team relational energy such that cross-expertise voice is more positively related to team relational energy when environmental uncertainty is low as opposed to high.

Combined with prior arguments, we further predict that when environmental uncertainty is lower as opposed to higher, voice that occurs between a dyad whose expertise is dissimilar is more likely to create relational energy in a team and subsequently facilitate team performance.

Hypothesis 4. Cross-expertise voice and environmental uncertainty interact to affect team performance via team relational energy.

METHOD

Sample and Procedure

Survey data was collected in six companies located in middle China. All the companies are engaged in IT-related business. The human resource (HR) departments of the companies helped us identify 72 teams. They were either R&D teams or IT-related career training teams, which are typical knowledge-intensive teams. In order to accomplish work tasks and goals in these teams, members needed to proactively utilize their expertise or knowledge and frequently exchange work-related information or ideas with one another. Given such interdependence and coordination among team members, this sample is suitable for our study.

An online survey was conducted. We obtained email addresses of target participants from the HR departments and sent out survey invitation to the participants via email. Two weeks after the launch of the survey, we sent a reminder to those who had not yet responded. Only the research team can access the responses. As such, the participants were assured of individual anonymity. To mobilize the companies to support our survey study, we promised to provide research reports on an aggregate level afterwards. To motivate the participants to take part in the survey study, we paid each participant CNY 40 (approximately EUR 5.5) after having received complete response from him or her.

Out of the 72 teams we contacted, members of 67 teams responded. However, in 8 of these teams, less than 70% of the members completed the survey. We excluded these teams from analysis to ensure the representativeness of team measures in our study. Our sample consisted of 60 teams with 384 participants (M_{age} = 28.77 years, 53.5% male). We did

not observe differences between responding and non-responding teams in age or gender composition.

Measures

Cross-expertise voice. Voice was measured with a social network approach. We provided the participants with a roster listing the names of all team members. Each participant was asked to answer how frequently every other team member shared his/her work-related suggestions with the focal individual, based on such a scale as 1 = "once a year or less", 2 = "a couple of times in a year", 3 = "once a month", 4 = "a couple of times in a month", 5 = "a couple of times in a week", and 6 = "a couple of times in a day". As for expertise background, we asked participants to indicate their college major. It was measured with four categories, including IT/mechanics/engineering, business, literature/art/education, or others. Further, cross-expertise voice was calculated as the amount of voice that occurred between expertise-dissimilar dyads divided by the possible maximum amount of voice for each team. This was adjusted from E-I index (Krackhardt & Stern, 1988). If teams were homogeneous in expertise, they scored zero on this variable.

Relational energy. It was also measured with a social network approach. We provided the definition of relational energy and asked each participant to indicate the extent to which every other team member affects the energy level of the focal individual (1 = "strongly de-energizing" to 5 = "strongly energizing"; Cross & Parker, 2004). We calculated the density of relational energy to capture the team-level relational energy. It was computed as the sum of individual ratings of energizing relationship in

team divided by the possible maximal sum of energizing relationship ratings among all team members (Kilduff & Brass, 2010).

Environmental uncertainty. This was measured using a five-item scale adapted from Miller and Dröge (1986)'s work. We asked participants to tick the number in each scale that best approximates the actual conditions in it, for example, 1 = "actions of competitors are quite easy to predict" to 7 = "actions of competitors are unpredictable", and 1 = "the production/service technology is not subject to very much change and is well established" to 7 = "the models of production/service change often and in a major way". Prior to the aggregation of individual ratings to the team level, we inspected the within-group agreement (median $R_{wg(j)}$ = .86) and intra-class correlation coefficients (ICC(1) = 0.07, ICC(2) = 0.34; Bliese, 2000; LeBreton & Senter, 2008). Despite relatively low scores on ICCs, the evidence of sufficient between-group variance (F = 1.52, p = .022) and a high $R_{wg(j)}$ lent support to the aggregation of individual responses to the team level (Chen & Bliese, 2002; Kozlowski & Hattrup, 1992).

Team performance. We used Keller (2006)'s measure to evaluate team performance from four aspects including technical quality, schedule performance, cost performance, and customer satisfaction (internal and external), with a scale ranging from 1 = "very low" to 7 = "very high". Team performance was rated by a higher-level manager outside the team. On average, each higher manager evaluated about four teams.

Control variable. We controlled for expertise diversity. The more diverse team members in terms of expertise background, the greater potential for them to voice across expertise boundary and the more likely to create excitement and energy within the team. Given that expertise diversity

was highly correlated with cross-expertise voice, we presented the results below without the expertise diversity, but we reported the results both with and without the control variable.

Translation/back-translation procedures (Brislin, 1986) were followed to translate all measures from English into Chinese.

Analytic Approach

As all the variables concerned were team-level variables, data analysis was conducted on the team level. Given the fact that a higher manager could assess performance of multiple teams, we conducted regression analysis with cluster-robust standard errors (McNeish, Stapleton, & Silverman, 2017) using *miceadds* package (Robitzsch, Grund, & Henke, 2019) in R so as to account for the nested structure of our data by correcting the clustering bias in the standard error estimates. To test the mediation effect (Hypothesis 3) and conditional indirect effect (Hypothesis 4), we used Monte Carlo method (Selig & Preacher, 2008).

RESULTS

Table 1 displays descriptive statistics, bivariate correlations, and reliability coefficients of the variables.

Insert Table 1 about here

Table 2 presents the results of our regression analysis. We predicted that cross-expertise voice is positively related to team relational energy. Regression results (Model 1 in Table 2) showed a positive relationship between cross-expertise voice and relational energy (B = 0.27, *SE* = 0.07, $p < .01$). Hypothesis 1 was thus supported. Hypothesis 2 proposed that the

positive relationship between cross-expertise voice and team performance would be mediated by team relational energy. Regression results revealed that relational energy was positively associated with team performance (B = 2.54, *SE* = 0.74, $p < .01$; Model 6 in Table 2). Further, Monte Carlo mediation test indicated that the indirect effect of cross-expertise voice on team performance via team relational energy was significant (indirect effect coefficient = 0.70, 95% CI = [0.24, 1.30]). Hypothesis 2 was therefore supported.

Insert Table 2 about here

Further, we proposed that a low level of environmental uncertainty would strengthen the positive effect of cross-expertise voice on team relational energy. The interaction of cross-expertise voice and environmental uncertainty on team relational energy was significant (B = -0.21, *SE* = 0.10, $p < .05$; Model 4 in Table 2). As shown in Figure 2, when environmental uncertainty was high, the effect of cross-expertise voice on relational energy was not significant (B = 0.19, $t = 2.16$, $p < .05$); when environmental uncertainty was low, the effect of cross-expertise voice on relational energy was positively significant (B = 0.39, $t = 5.69$, $p < .001$). In combination, these results supported Hypothesis 3.

Insert Figure 2 about here

Hypothesis 4 predicted that the interactive effect of cross-expertise voice and environmental uncertainty on team performance would be

mediated by team relational energy. Results of Monte Carlo test (with 20000 replications) showed that the overall conditional indirect effect was significant (coefficient = 0.72, 95% CI = [0.22, 1.35]). When environmental uncertainty was high, there was a positive indirect effect of cross-expertise voice on team performance (coefficient = 0.47, 95% CI = [0.03, 1.12]). When environmental uncertainty was high, there was also a positive indirect effect of cross-expertise voice on team performance via relational energy (coefficient = 0.96, 95% CI = [0.31, 1.75]). Thus, Hypothesis 4 was supported

DISCUSSION

Through the lens of relational energy theory, the current study examined how and when cross-expertise voice, or the voice that occurred between the dyads who are different in expertise, could facilitate team performance. First, we found that the more voice that occurred around the team members of different expertise background, the more likely that voicers led coworkers to feel excited or energized; via creating the relational energy within the team, the cross-expertise voice was likely to be translated into improved team performance. Further, we identified environmental uncertainty as an important contextual factor that predicted when cross-expertise voice would be more likely to foster relational energy in teams and subsequently benefited team performance. In the following, we discuss the theoretical implications of our findings.

Theoretical Implications

Establishing a relational energy perspective to unravel how and when cross-expertise voice can be turned into improved team performance, the current study informs theoretical implications in three major ways. First,

focusing on who voices to whom in a team, we propose that cross-expertise voice, or the voice that occurs between members who are different in expertise backgrounds, has a unique influence for teams above and beyond the volume of voice. In the extant studies on voice in teams (e.g., Detert et al., 2013; Liang et al., 2019), voice was assumed to exert influences on team as a whole. Specifically, when investigating voice in teams, these studies focused on the volume of voice and examined its effects for teams. Deviating from the prior research, we propose that voice might be better understood when being communicated to one or a few members than to the team as a whole. This points to the importance of studying who voice to whom in addition to the amount of voice. Specifically, taking into consideration the boundary defined by social categorization, we focus on the voice that occurs between dyads who have different expertise background in a team and found that such cross-expertise voice could exert positive impact on team performance. Future research may extend the scope of cross-boundary voice by throwing light on other dimensions of social category such as functional department and gender, or further investigating cross-faultline voice, for example, the voice that occurs across a faultline defined by a combination of gender and functional background.

Second, we further enrich voice literature by unpacking how cross-expertise voice leads to improved team performance. The extant studies regarding how voice would bring about positive consequences have heavily replied on cognitive mechanisms (e.g., Edmondson, 1999; Li et al., 2017; Liang et al., 2019). This line of research suggested that the main reason why voice can facilitate team innovation or team performance is intellectual stimulation and information integration that result from exchanges of ideas

among team members. Despite these prior findings, we propose that cognitive stimulation is necessary but may not be sufficient, especially when it comes to the translation of ideas into substantial actions. In addition to cognitive stimulation, motivational mechanism might be required to mobilize people to buy into and actually act upon raised ideas. In this sense, we recognize relational energy as such a motivational mechanism through which raised ideas and opinions could be turned into real actions and improved team performance. Another implication from the current study is that voice behavior seems to be a critical means to bridge the cognitive gap among team members who greatly differ in expertise, by which the benefits of diverse expertise backgrounds can be realized. Voice, as a form of proactive behavior (Parker & Collins, 2010), functions as a channel for a focal individual to articulate the rationale underlying raised ideas and elucidate the necessity of making changes. It might be interesting to investigate whether other forms of proactive behavior, such as taking charge to bring about change (Morrison & Phelps, 1999) or self-initiated role expansion (Parker, Wall, & Jackson, 1997), would create relational energy for other team members and, in turn, facilitate team functioning as well.

Third, focusing on the very reason why team members may have difficulties in creating energy or excitement when communicating ideas or opinions to expertise-dissimilar others, i.e., social categorization, we recognize environmental uncertainty that confronts teams as a critical condition under which cross-expertise voice is more likely to facilitate team performance through fostering relational energy, so as to emphasize the important role of business environment in determining the effectiveness of

voice in teams. More specifically, when the business environment is perceived to be less uncertain, the value of cross-expertise voice is more likely to be realized through energizing team members than when the environment is more uncertain. When studying the influences of voice in teams, future research may consider other macrolevel factors that capture a broader context in which teams are embedded and team members voice behaviors are shaped (Morrison, 2014).

Limitations and Future Research Directions

Despite the important theoretical and practical implications above, the present study has some limitations that should be considered in future research endeavors. First, we interpreted the findings in accordance with hypothesized causality. That is, voicing to expertise-dissimilar others would result in relational energy and subsequently get one's ideas implemented. However, the cross-sectional nature of our survey study design, constrains us from examining the causality. For instance, it is possible that those who are able to energize others are more likely to have their ideas heard, which implies a causal relationship between relational energy and the voice rated by peers. Therefore, it merits longitudinal design to examine the relationships found in the current study and explore the potential reversed relationships.

Second, testing our hypotheses in only one industry might limit the generalizability of the findings in the current study. It is likely that different results might have been obtained if companies from a different industry had been included. Although we conducted the survey study in six different companies, all of them engaged in R&D and IT-related career training. Hence, it is possible that due to potentially idiosyncratic characteristics of

this industry, the findings might not be generalized to companies in other industries. To address this issue, future research may sample a wider range of companies or organizations from a variety of industries.

Third, in terms of the nature of voice, we focused on constructive voice, which is the most frequently studied form of voice in the literature (Chamberlin, Newton, & Lepine, 2017). However, team members might engage in other forms of voice, such as prohibitive voice (Liang et al., 2012) or even destructive voice (Maynes & Podsakoff, 2014). These forms of voice might be less likely than constructive voice to create excitement or energy among team members, and rather probably de-energize others. Future research should expand the scope of voice and examine how other types of cross-boundary voice influence team process and effectiveness.

Practical Implications

The results of this study also have some inspiring practical implications for practitioners. First of all, for teams in which team members are highly diverse in expertise background, team leaders need to be aware that the potential benefits of great diversity in expertise might not be fulfilled. Team members of very different expertise or knowledge background may find it hard to understand each other's points of view, so the wide-ranging pool of knowledge, skills, and abilities would be utilized to a constrained extent. To overcome the difficulty in getting ideas through to a colleague who is very dissimilar in expertise, team leader could encourage voice behavior such that team members can take this opportunity to elaborate on the rationale underlying raised suggestions, the necessity of making certain changes, and the possible concrete paths to achieve a proposed future state as well. In this way, increased voice could help fulfill

the potential of having great diversity in expertise by getting others supportive of and engaged in acting upon raised suggestions.

When raising voice, it is important to evaluate the effectiveness of communicating ideas to others. It has been acknowledged that voice is challenging the status quo in nature (though the current study focused on constructive voice), as it might implicitly point to the person responsible for raised issues and provoke negative responses from others (Liang et al., 2012). Therefore, it is important to monitor whether voicer can energize others by conveying their work-related suggestions to others. Prior work has suggested that energizers are those who not only bring about brilliant ideas but more importantly can mobilize others to buy into the ideas and engage in actions to make them come true; during this process, energizers might also create opportunities for others to contribute to actions of problem-solving (Cross & Parker, 2004). In this sense, it would be wise for managers and voicers to proactively engage others when voicing up to them. Also, it would be meaningful to monitor how voice is perceived by recipients. If recipients do not immediately get excited about your ideas, a voicer may invite them to enter the conversation, probe whether one's point has been delivered, and attempt to reframe viewpoints if necessary, rather than dominating the conversation.

Also, we highlight that it is important to take into consideration the macro environment in which teams are embedded when teams intend to better facilitate the exchanges of ideas and opinions among team members who have diverse expertise backgrounds. The key influence derived from the environment lies with the perceived uncertainty of the environment, manifested by how often internal models of production or service need to

update, the extent to which competitor's actions are predictable, etc. These elements would largely affect team members' reactions to the ideas expressed by out-group members. As elucidated previously, when environment is perceived to be highly uncertain, individuals would rely on group membership or form social identification in order to reduce the uncertainty; consequently, the intergroup bias may cause them to less likely embrace the ideas from out-group members (i.e., expertise-dissimilar members in our case). Given the diminishing role of environmental uncertainty in utilizing diverse expertise via energizing others through voice, team leaders particularly need to probe the external environment closely and provide proper guidance for team members in a timely manner. When environment is perceived to be uncertain, it is of utmost importance for team leaders to highlight the value of exchanging ideas and opinions across members of different expertise backgrounds, and encourage them to recognize and appreciate one another's unique qualities and values. As such, teams are more likely to overcome the negative influences of environmental uncertainty and thus better take advantage of diversity in expertise or knowledge among team members.

CONCLUSION

Throughout this paper, we have argued that cross-expertise voice in teams could facilitate team performance through creating relational energy within the teams, and that this relationship would be more pronounced when environmental uncertainty is lower. The findings of our field survey study lend support to our predictions and suggest that encouraging voice across the expertise boundary among team members would help realize the potential benefits of great expertise diversity in teams.

TABLE 1

Means, Standard Deviations, and Inter-Correlations among Key Variables[a]

	Variables	Mean	SD	1	2	3	4
1.	Cross-expertise voice	0.23	0.21	–			
2.	Relational energy	0.70	0.12	.47**	–		
3.	Environmental uncertainty	3.91	0.47	-.16	-.11	(.72)	
4.	Team performance	5.26	0.90	-.15	.20	.04	(.90)
5.	Expertise diversity	0.36	0.29	.90**	.36**	-.20	-.32*

[a] $n = 60$. Reliability coefficients (Cronbach's alpha) for measures are presented in parentheses on the diagonal.

* $p < .05$; ** $p < .01$. Two-tailed tests.

TABLE 2
Regression Analysis Predicting Relational Energy and Team Performance[a]

Variables	Relational Energy					Team Performance			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Intercept	0.70**(0.01)	0.70**(0.01)	0.70**(0.01)	0.70**(0.01)	0.69**(0.01)	5.27**(0.15)	5.28**(0.10)	5.26**(0.16)	5.27**(0.10)
Cross-expertise voice (CEV)	0.27**(0.07)	0.46**(0.07)	0.27**(0.06)	0.29**(0.07)	0.50**(0.06)	-1.33* (0.60)	1.74* (0.83)	-1.24 (0.69)	1.96**(0.66)
Environmental uncertainty (EU)			-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)			0.07 (0.24)	-0.03 (0.23)
Relational energy						2.54**(0.74)	1.94**(0.69)	2.48**(0.82)	1.79* (0.79)
CEV × EU				-0.21* (0.10)	-0.23* (0.11)			-0.55 (1.30)	-0.93 (1.15)
Expertise diversity		-0.15**(0.05)			-0.17**(0.05)		-2.42**(0.77)		-2.50**(0.66)
R^2	0.22	0.25	0.22	0.25	0.28	0.12	0.23	0.12	0.24
ΔR^2		0.03		0.03	0.03		0.11		0.12

[a] $n = 60$. Unstandardized regression coefficients are presented with standard errors in parentheses.
* $p < .05$; ** $p < .01$.

FIGURE 1
Conceptual Model

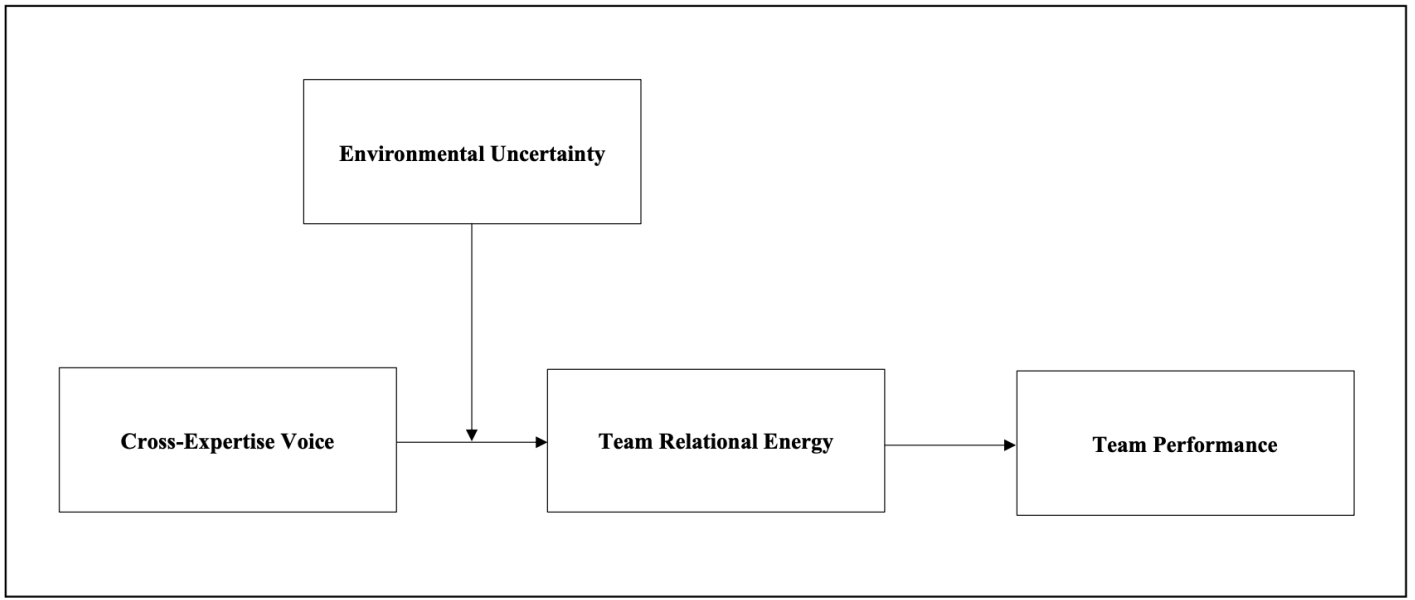
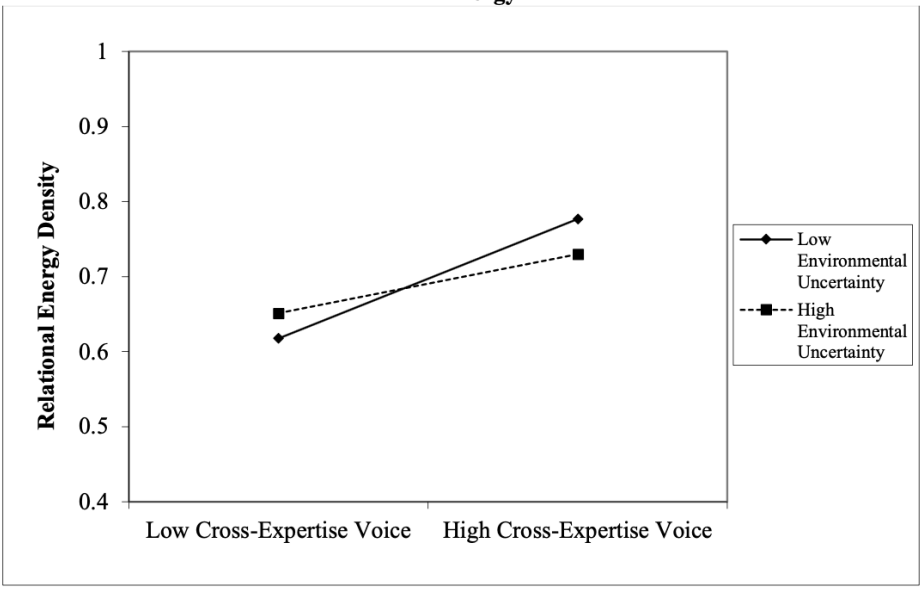


FIGURE 2
Interaction Effect of Cross-Expertise Voice and Environmental Uncertainty on Relational Energy



CHAPTER 4

Only Time Will Tell: How Teams Centralize Their Voice Around Competent Members Over Time to Perform Better

INTRODUCTION

Voice, or members' expression of ideas or opinions that seek to constructively change work practices or processes within the team (e.g., Morrison, 2014; Van Dyne & LePine, 1998), can positively impact team outcomes such as sales, productivity, and workplace safety (e.g., Detert, Burris, Harrison, & Martin, 2013; Lam & Mayer, 2014; Li, Liao, Tangirala, & Firth, 2017; MacKenzie, Podsakoff, & Podsakoff, 2011). Via their voice, members can bring up critical performance-relevant information previously unrecognized by others in the team, point out problems that are disrupting team functioning, and, importantly, highlight solutions to those problems (e.g., Edmondson, 2003). As such, when voice is higher, teams can better use members' expertise and knowledge to remain effective.

However, research has largely focused on the overall volume of voice in teams and has overlooked how voice is *distributed* within them. For instance, when examining how voice influences team outcomes, studies have tended to only examine the average voice levels in teams, which implicitly assumes that within-team variations in the expression of voice among members do not matter (e.g., Lam & Mayer, 2014; Li et al., 2017; MacKenzie et al., 2011; McClean, Burris, & Detert, 2013; Podsakoff, Maynes, Whiting, & Podsakoff, 2015). Recent research has begun questioning this assumption by noting that voice can be unequally distributed in teams, in particular centralized around one or a few members,

and that such distributions have performance implications (e.g., Sherf, Sinha, Tangirala, & Awasty, 2018; also see Woolley, Chabris, Pentland, Hashmi, & Malone, 2010). However, this work stops short of an explanation about how such distributions emerge or the factors that allow teams to encourage members with the right attributes to take on more active speaking roles than others. We extend this research by examining *how* voice becomes centralized within teams, *who* it tends to centralize around, and what *distinguishes* teams from one another in their ability to better place members who can especially facilitate team functioning as more active voicers.

Specifically, we integrate Expectation States Theory (EST; Bales, Strodtbeck, Mills, & Roseborough, 1951; Berger, Wagner, & Zelditch, 1985) and Role Theory (RT; Graen & Scandura, 1987; Katz & Kahn, 1965) to develop our conceptual model. EST suggests that (a) members generally tend to listen to or encourage the opinions of some members more than others because members usually differ in attributes valued by the team, and (b) in work teams where accomplishment of task goals is of importance, members seen to have greater *competence,* or expertise relevant to the team tasks, are likely given more speaking time than others. Hence, drawing on EST, we suggest that voice naturally becomes centralized in teams and does so particularly around competent members. Complementary to EST, RT indicates that this process of centralization unfolds only over time through a cumulative process of role taking, role making, and role routinization through which members come to understand their roles within teams. Therefore, relying on RT, we highlight that *time* is a critical factor that needs to be considered when understanding voice configurations in teams:

Teams start off with relatively egalitarian voice distributions and over time slowly move toward more centralized voice distributions, especially by allowing competent members to speak up more.

Moreover, we argue that although teams are generally motivated to centralize their voice around more competent members, they might differ in their ability to convince their more competent members to take on more active speaking roles. In particular, drawing on literature that has indicated that team composition critically impacts team interactions (e.g., Ilgen, Hollenbeck, Johnson, & Jundt, 2005), we make a case that some teams due to the way that they are constituted are better able to galvanize their competent members into speaking up more. Specifically, we argue that teams composed of members with higher *openness to experience* and *conscientiousness* (e.g., Bell, 2007) due to the intellectually curious environments that they stimulate or their focus on tasks and merit respectively, are better at persuading competent members to contribute by taking on more responsibility for voice in their teams. Hence, we make a case that these teams are more effective in not only initially convincing their more competent members to speak up but also the pace at which they are able to replace less competent members from prominent speaking roles with more competent members as time progresses. Finally, we argue that ultimate voice distributions that teams achieve impact team performance such that when voice centralization occurs around more competent members in the teams, the teams do better than when they do not centralize, whereas when such centralization occurs around less competent members, they perform worse. Figure 1 represents our overall conceptual model.

Insert Figure 1 about here

By examining these relationships, we make several contributions. First, by accounting for *time* in our theory, we advance understanding of how voice patterns develop in teams. Although recent studies have noted that voice may not be uniformly distributed among members (Sherf et al., 2018; Woolley et al., 2010), little is known about how unequal configurations of voice get prevalent in teams. We highlight that teams start off with an egalitarian distribution of voice and steer over time toward centralization of that behavior, typically with competent members progressively given more and more air time. Thereby, we underscore not only the key reason for unequal distribution of voice within teams—that is, teams strive to provide their more competent members greater say in decision making—but also how this process is not immediately evident in teams but manifests strongly only after members spend sufficient time working together.

Second, we extend the teams literature by identifying team constitution in terms of personality composition of members as a predictor of voice distribution within teams. Research on team composition has shown that it has an important impact on team processes and emergent states such as cooperation and teamwork (e.g., Bell, 2007; Mathieu, Maynard, Rapp, & Gilson, 2008). We extend this research by demonstrating that team composition can not only shape the levels of such processes and emergent states but also impact the *pattern or distribution* of behaviors among members. That is, we note that when members are, on an

average, higher on conscientiousness or openness to experience, teams become more capable of placing competent members in central voicer roles right at the start, and/or reallocating such central speaking roles to competent members over time. As such, we highlight how *compositional* processes (that represent how average member attributes emerge to the team level) can impact *compilation processes* (e.g., the extent to which certain members take on more active roles than others in the team) within teams (e.g., Mathieu et al., 2008). In doing so, we highlight that compositional and compilation processes are not necessarily unrelated to each other as often assumed in the literature (e.g., Chan, 1998) but can influence each other as teams with certain compositions set conducive environments for members with valued individual attributes to shine.

Third, we challenge the predominantly negative view of voice centralization in the literature (e.g., Woolley et al., 2010). Prior studies have noted that voice centralization prevents teams from properly utilizing expertise of their members because it implies that some members gain disproportionate air time at the expense of others (e.g., Sherf et al., 2018). Hence, they have suggested that voice centralization, in general, adversely affects team effectiveness and at best teams can only seek to mitigate or minimize such negative effects. We take the stance that voice centralization naturally occurs in teams as they attempt to defer to their best members. Hence, we make the case that, when this process is properly managed within teams, it can actually help teams better leverage the competence of their best members to perform even better than teams that have more egalitarian voice distributions. Thereby, we highlight how voice

centralization, in certain circumstances, can help teams improve their performance.

THEORY AND HYPOTHESES

When members speak up, teams can identify problems, come up with solutions for those problems, and implement changes that improve the status quo (Edmondson, 2003). As a result, voice facilitates team learning and effectiveness. For example, studies have shown that voice can boost service quality (e.g., Detert et al., 2013; Lam & Mayer, 2014), foster team innovation by allowing teams to leverage members' knowledge (Liang, Shu, & Farh, 2019), and facilitate team safety performance by improving monitoring of errors and mistakes (Li et al., 2017).

Team-based research has conceptualized voice in two related ways (Podsakoff et al., 2015). First, some studies have represented voice at the team level using the average of the individual voice of the members (e.g., Erez, LePine, & Elms, 2002; Lam & Mayer, 2014; McClean et al., 2013). That is, they have captured team voice as an additive function of the individual voice of members. Second, other studies have represented voice at the team level using a referent-shift approach to ask members to think about their team as a whole and rate the extent to which all the members speak up during work interactions (e.g., Li et al., 2017; MacKenzie et al., 2011). This approach represents team-level voice as the extent to which all members, in general, speak up within the team. Both these approaches do not seek to unpack how voice is distributed among members and assume that any deviations that members behaviorally demonstrate from the team average is statistical noise that can be overlooked.

However, recent research in the voice literature (e.g., Sherf et al., 2018) and, more generally, in the teams literature (e.g., Woolley et al., 2010) has challenged this assumption by noting that teams can have unequal distributions of voice with one or a few members taking up more airtime or speaking turns than others, an aspect referred to as *voice centralization*. This work has also noted that voice centralization is detrimental to team functioning as it prevents teams from equally utilizing the expertise resident in all members (Sherf et al., 2018).

Voice Centralization: How It Emerges Over Time

Although scholars have suggested that voice can centralize within teams, much less is known regarding how or why such centralization emerges. We posit that rather than being a negative feature of team interactions, voice centralization can be a natural process through which teams seek to give their more competent members a greater chance to contribute their knowledge to help the teams maintain their effectiveness. In particular, we propose (a) that as teams develop over time, teams tend toward greater centralization of voice, and (b) that such centralization tends to occur around more competent members within the teams.

To begin with, EST (Bales et al., 1951; Berger et al., 1985; Correll & Ridgeway, 2006) highlights that teams are unlikely to be sites for egalitarian patterns of agency by members as teams allow agentic action more from some members than from others. That is, members do not similarly possess attributes valued by teams and, hence, are allowed unequal impact based on the attributes that they bring to the table. In work teams, competence, defined as task expertise or knowledge, is likely a valued member attribute. Members with higher competence have greater

potential to make contributions, in form of quality work inputs or solutions for team problems, and hence are seen to be more valuable for teams seeking to fulfill their work goals (e.g., DeRue, Nahrgang, & Ashford, 2015; Van Vugt, Hogan, & Kaiser, 2008).

In general, studies have indicated that observers, based on thin slices of interaction, can quickly and with substantial accuracy understand the competence that different members are bringing to their groups (e.g., Ambady & Rosenthal, 1993; Levesque & Kenny, 1993; Prickett, Gada-Jain, & Bernieri, 2000). However, RT (e.g., Katz & Kahn, 1965) when applied to this issue, suggests that despite such recognition of competence early on within teams, voice might not centralize around competent members as soon as members start working together but only does so over time because it takes time for roles and norms to crystallize in teams.

In particular, for voice to centralize around competent members, (a) internal consensus needs to emerge within teams that members would allocate greater speaking turns to their more competent counterparts, and (b) more competent members, in turn, should accept expanded roles within teams as those who speak up the most with ideas or opinions that challenge the status quo (cf., DeRue & Ashford, 2010). That is, centralization likely begins manifesting only after communication norms emerge across multiple levels over time as teams collectively endorse voice from competent members *and* competent members internalize expectations that they would more frequently than others bring up ideas and opinions in the team.

RT further notes that this process unfolds iteratively over time through role taking, role making, and role routinization within teams (Graen & Scandura, 1987; Katz & Kahn, 1965). That is, to begin with,

teams might solicit or seek ideas and input from some selected members in their midst over others and thereby send expectations that those members speak up more in the team (role taking). Those selected members who receive such role expectation might respond to them by enacting the expected role behavior—that is, by speaking up (role making). The teams in turn can respond to such speaking up by paying attention to and socially rewarding it. When members feel that their voice is valued within the teams, they begin to incorporate it into their behavioral repertoire, leading over time to role routinization as dominant speakers within the teams. Through this process, voice roles within teams get congealed over time and voice centralization increases. Furthermore, given that members with higher competence are more likely to receive signals in teams to speak up and are likely to have more of their ideas and opinions endorsed and encouraged within the teams, they are more likely to gradually internalize their roles as dominant speakers within the teams and behave accordingly. As this role routinization process solidifies over time, the probability that competent members are more frequent voicers within the teams should progressively increase. Putting these arguments together, we predict the following:

Hypothesis 1. Over time, voice centralization increases within a team.

Hypothesis 2. Over time, voice centralization increasing occurs around more competent members.

Team Personality Composition

Although voice centralization, in general, increases over time across most teams, we argue that some teams are better than others in centralizing

their voice around their more competent members. This can manifest in two distinct ways: *Initial placement* and *rate of placement* over time of competent members in dominant speaking roles within teams (see Bentein, Vandenberghe, Vandenberg, & Stinglhamber, 2005 for a similar conceptualization). That is, teams can vary in how effective they are in initially convincing their more competent members to speak up as well as the pace at which they are able to replace any less competent members from central voicer roles with more competent members as time progresses. Both such initial placement and (re)placement over time should be associated with whether the teams end up with more competent members as dominant speakers in centralized voice distributions.

RT posits that the attributes such as personality of the people in the role set (that is, members of the team who constitute the immediate interpersonal environment for voice) can influence the clarity, cogency, and type of roles they might communicate to the focal actors (Katz & Kahn, 1965). Similarly, research on teams has indicated that team composition in terms of the personality of the members can powerfully impact the way members work with each other as well as teams' internal operations (e.g., Bell, 2007; Ilgen et al., 2003). Drawing on these literatures, we argue that personality composition of teams, or the average scores of the members on a particular trait (Barrick, Stewart, Neubert, & Mount, 1998), can impact the effectiveness with which teams place their more competent members in dominant voicing roles in the teams.

Team composition in personality captures the characteristic pattern of interactions within the teams as members navigate their tasks (Bell, 2007; Driskell, Hogan, & Salas, 1987; Hackman, 1987). Hence, it should

impact the extent to which the teams have an interpersonal environment that encourages the more competent members to go well beyond to contribute to the teams by speaking up. In particular, members with good opinions or ideas do not automatically or necessarily speak up more within their teams unless they feel that the teams are attentive to new ideas and have sufficient motivation to achieve excellence in their operations (e.g., Li & Tangirala, *in press*; Sherf, Parke, & Isaakyan, *in press*). In this context, we examine two important team compositional variables that are likely to increase team's willingness to explore novel suggestions and increase their focus on task excellence and merit—*openness to experience* and *conscientiousness*, respectively.

Teams' personality composition of openness to experience, or team openness, captures the extent to which members on an average are curious, imaginative, and broad-minded (Bell, 2007; LePine, 2003). Teams with high openness to experience have a strong intellectual curiosity and a motivation to explore and figure out work problems and opportunities (LePine, 2003). Moreover, when these teams work on a task, they tend to broadly or extensively search for new information and explore novel insights that members bring to the teams (Bell, 2007). Complementarily, members with high competence, compared to those with low competence, have more ideas and suggestions to share on tasks at hand; they are also able to break down complex problems confronting the teams to allow for comprehension and come up with better articulated solutions to those problems (e.g., Herling, 2000; Hoffman, Shadbolt, Burton, & Klein, 1995; Marand & Noe, 2017; Shanteau, 1992). Hence, teams with high openness to experience, in their motivation to understand their task space, tend to

naturally pay attention to what competent members have to say. They might also be more willing to follow up on ideas and solutions expressed by such members by experimenting with new work practices and procedures.

Thus, when working in teams with high openness to experience, competent members get clear signals that their ideas are valued and that the teams are willing to act on them. Given that such signals of valuation and sense of impact are key motivators of voice from members (e.g., Sherf et al., *in press*; Tangirala & Ramanujam, 2012), teams with high openness to experience might be better able to persuade competent members to contribute to their teams by taking on more dominant speaking roles early in team development. Moreover, given that successful voice episodes can enhance appetite in members for speaking even more by building a positive spiral of agency over time (e.g., Li & Tangirala, *in press*), competent members who face early and clear encouragement from teams with high openness to experience would take on even larger speaking roles within the teams as time passes. Hence, these teams should be better able to not only induce competent members to take on central voicer roles early in the team tenure but also at a faster pace replace any less competent members from central voicer roles with more competent members as time progresses. Hence, we propose the following:

Hypothesis 3a/b. Team openness to experience is positively related to (a) the extent to which teams initially place competent members as central voicers and (b) the rate, over time, at which they place competent members as central voicers.

Team composition in conscientiousness, or team conscientiousness, refers to the degree to which members of a team are task-focused,

disciplined, and achievement striving (Barrick et al., 1998; Costa & McCrae, 1992; LePine, 2003), and committed or dedicated to their work goals (English, Griffith, & Steelman, 2004; Neuman & Wright, 1999). Given such focus on achieving task excellence, these teams likely place a greater weight on the actual merit of the ideas or opinions expressed by members rather on non-task related attributes (e.g., likability) of such members when responding to internal voice. Moreover, because such teams seek high levels of performance, they can be more willing to act on useful ideas or solutions that potentially help them achieve task goals. Finally, such teams, due to their higher dependability and discipline, can be better at systematically and quickly acting on task-relevant ideas that they encounter.

Hence, competent members, who usually have high quality suggestions and solutions to share because they understand their task environment better (e.g., Herling, 2000; Hoffman et al., 1995; Marand & Noe, 2017; Shanteau, 1992), can find working in highly conscientious teams motivating. That is, these teams, due to their task focus and concern for work excellence, would likely make the work environment welcoming for competent members. Hence, right from the beginning, such members should be more motivated to take on expanded roles to speak up within their teams. Additionally, the ability of highly conscientious teams to get things done can make competent members feel that their ideas are not only being paid attention to but also are getting acted on, leading these members to feel more and more motivated as they spend more time working in the teams. Hence, these teams should be better at not only prompting competent members to take on and internalize central voicer roles early

during team interactions but also replace any less competent members from central voicer roles with more competent members as time progresses. Hence, we propose the following:

Hypothesis 4a/b. Team conscientiousness is positively related to (a) the extent to which teams initially place competent members as central voicers and (b) the rate, over time, at which they place competent members as central voicers.

Consequences of Voice Centralization

We propose that (a) once voice centralization patterns stabilize in teams, they begin to have important implications for team performance, and (b) at which time, the extent to which more competent members have taken on dominant speaking roles in teams should be associated with team success. That is, when voice roles and distributions, in terms of who within a team is speaking up more and by how much, are still in flux, they are likely too transient and varying to have a strong impact on the team. However, after they stabilize, their performance effects should clearly manifest. Importantly, around the same time that voice roles and distributions in teams get fully established, teams also would have accumulated sufficient history working together and reached more mature phases of development (cf., Kozlowski & Bell, 2013; Tuckman, 1965). In such phases, teams are in better positions to mobilize collective action to address voice from their members (e.g., Kozlowski, Gully, Nason, & Smith, 1999) for completing tasks, deadlines of which start looming larger (e.g., Gersick, 1988).

In such mature phases of interactions, two aspects of voice centralization can impact team performance, or the ability of teams to

achieve their goals: (a) the degree of centralization that the teams have ultimately achieved over time, and (b) whom the teams have centralized their voice around. The degree of centralization dictates the extent to which teams have centralized their voice around one or a few members (Freeman, 1978; Wasserman & Faust, 1994). That is, at maximum voice centralization, only one member in the team accounts for all the voice that occurs within the team; at minimum voice centralization, all members contribute equal levels of voice in their teams. As we made a case earlier, although there might be variability in this process, teams generally start off with a more egalitarian distribution of voice and move toward more centralized forms of voice as time progresses.

Although scholars have, in general, highlighted the benefits of egalitarian distributions of voice as they allow all members to contribute to team functioning (e.g., Sherf et al., 2018; Woolley et al., 2010), more often than not competence is not equally distributed within teams (e.g., DeRue et al., 2015). Hence, not all the members can provide equally useful inputs to improve team operations. Therefore, providing uniform opportunities for all members to speak up is not necessarily the most functional strategy for teams. Instead, we make a case that teams that ultimately achieve high degrees of voice centralization can benefit, but only when their more competent members account for most voice.

More competent members better comprehend task requirements, have the expertise to identify problems earlier, and have better solutions to tackle them (e.g., Herling, 2000; Hoffman et al., 1995; Marand & Noe, 2017; Shanteau, 1992). Hence, when highly competent members also get to speak up the most in teams (either because they were placed in that position

right from the start or because they get placed in that position over time as the teams develop or mature), they get more opportunities to provide the right direction for the teams, properly bring up problems that exist in current work practices, and suggest stronger ways to improve work processes. Thereby, teams that over time have centralized voice patterns but around members with higher competence likely outperform teams with egalitarian voice patterns, as the latter cannot so extensively leverage the expertise of their more task-proficient members.

However, not all teams can create conducive environments where members with higher competence feel motivated to take on more agentic roles (e.g., Tarakci et al., 2016) either from the start or over time as teams develop. Hence, although many teams in their mature stages might find themselves with centralized voice patterns, only a subset of them might have placed their more competent members in dominant speaking roles. That is, many teams can end up allowing disproportionately greater air time to less competent members who might not be able to provide appropriately useful ideas or solutions to team problems. Because such teams have over time mis-managed the voice centralization process and ended up, during their important performing stage of team development, encouraging more voice from less competent members at the expense of voice from more competent members, they likely perform *worse* than teams that have more egalitarian distributions of voice. Hence, overall, we predict that the extent to which voice is ultimately centralized is positively (negatively) associated with team performance when more (less) competent members take on more central roles as voicers in teams.

Hypothesis 5. Ultimate voice centralization in the team is positively (negatively) related to team performance when central voicer is more (less) competent.

METHODS

Sample and Procedure

Third-year undergraduate students at a Dutch business school participated in the study. They worked on a case study assignment for Human Resource Management course. Before the course started, the students were randomly assigned to five-member teams, which were self-managing teams with no formal leaders designated. These teams were working intensively for a period of eight weeks. At the start of the course, they were required to contact an organization and diagnose its HR practices. Halfway through the course, they submitted a statement to register the organization they were studying and briefly introduce the problems existing in the organization. By the end of course, they handed in a report that contained detailed analysis of the problems and corresponding solutions.

Overall, the students responded to four waves of surveys. Before the course started (t_0), we sent out a survey to all students by e-mail and asked them to assess their openness to experience and conscientiousness. Two weeks after the start of the course (t_1), another survey was sent to the students inviting them to evaluate every other member's competence and voice. Four weeks (t_2) and six weeks (t_3) into the course, the students rated one another's voice again. Students were informed that these surveys were integral part of the course and important for their learning experience. The final three surveys were timed to ensure that they tapped into early (t_1), mid

(t_2) and mature (t_3) stages of team development (e.g., Kozlowski et al., 1999). Based on our prior experiences with this course, it was expected that, in the first two weeks (at the end of which t_1 survey was administered), members would have had the opportunity to personally know each other, discussed plans for the task, set up a timetable for action, and got foothold into their target organization. In the next two weeks (at the end of which t_2 survey was administered), they would have delved into the HR practices of the organization, and began a diagnosis of these practices; they also needed to register their organization with the instructors and present a preliminary statement of their work, which clearly signaled the mid-point of their team tenure. In the two weeks after (at the end of which t_3 survey was administered), teams would have done a more detailed analysis of the organization, developed a structure for, and started writing the team report. This period represented the start of mature stages of team development as members would have developed a history both with the task and with each other. In the next two weeks, teams had to finalize their analyses and complete the team report. This life-cycle is typical of project teams that are used frequently in organizations (Lee, Koopman, Hollenbeck, Wang, & Lanaj, 2015).

We sought to balance statistical power (Dawson, 2003) and representativeness of network measures in the study. Following this principle, only those teams whose team response rate reached 60% or above across the four time points were included in the data analysis. The final sample consisted of 176 (of 200) teams and 875 (of 974) students. 41.9% of them were female. 67.8% were Dutch, 21.2% Non-Dutch European, 6.1%

Asian, and the remaining 4.9% other various cultural backgrounds (e.g., Moroccan, American, Australian).

Measures

Voice centralization. We used a round-robin peer-rating design to measure voice three times (i.e., t_1, t_2, and t_3). Each participant assessed how frequently every other member in their team made suggestions to improve team functioning in the past two weeks on a 5-point Likert scale ranging from "almost never" to "almost always". We first calculated the average of the ratings given by peers to each member represented the voice centrality of that member (Borgatti, Everett, & Johnson, 2013) or the extent to which they spoke up in the team. We then calculated voice centralization for each team at each of the three time points using the formula suggested by Freeman, Borgatti, and White (1991):

$$\text{Centralization} = \frac{\sum_{i=1}^{n}[C_X(p^*) - C_X(p_i)]}{max\sum_{i=1}^{n}[C_X(p^*) - C_X(p_i)]}.$$

This formula represents the extent to which the voice centrality of the maximum speaking member in the team $C(p^*)$ is different from the centralities of all other members in the team $C(p_i)$ as proportion of the theoretically maximum possible differences in such centralities. Hence, it captures the degree to which the distribution of a certain behavior in a team is centered around a single individual within that team (Wasserman & Faust, 1994), indicating behavioral inequality among team members. The score on this measure of centralization can vary from 0 to 1, with 0 representing a totally egalitarian distribution and 1 a totally centralized

distribution with only one-member accounting for most of the reported voice in the team. In our case, voice centralization across the three points ranged from 0 to .61.

Central voicer's competence. We first identified the most central voicer (i.e., the member who voiced the most) in a team at each point. The member with the highest voice centrality score, which represented the extent to which each member spoke up in the team was identified as the most central voicer in a team for each time point (t_1, t_2, and t_3). Next, we obtained the score on competence of those most central voicers. Competence was measured with a round-robin design as well. Each participant indicated the extent to which every other member in their team was competent, described as having most expertise for the team task, on a 5-point Likert scale ranging from "not at all" to "completely" at time point t_1. We extracted the average peer rating on the competence of the most central voicer identified at that time point and each subsequent time point. We expected the peer ratings for an individual to converge and did find support for such convergence, as indicated by the within-group agreement (median R_{wg} = .83) and intra-class correlation coefficients (ICC[1] = .17, ICC[2] = .40, F = 1.67, p < .001; Bliese, 2000; LeBreton & Senter, 2008). In a case where two or more members scored equally the highest on their voice levels in their team, the mean of their competence scores was used to represent the most central voicer's competence (see Sherf et al., 2018 for a similar procedure).

Team openness to experience and ***conscientiousness***. We operationalized these personality traits using the NEO Personality Inventory (Costa & McCrae, 1992). Openness to experience was measured

by 8 items (e.g., “I can handle a lot of information” and “I see beauty in things that others might not notice”). Conscientiousness was measured by 10 items (e.g., “I carry out my plans” and “I like order”). These items were rated on a 5-point Likert scale ranging from “strongly disagree” to “strongly agree”. Cronbach’s α of team openness and team conscientiousness was .73 and .82, respectively. We used an additive compositional model (Chan, 1998) to aggregate the individual ratings of members on these two variables by calculating the member mean for each team, so as to obtain openness and conscientiousness scores for the team as a whole (see Barrick et al., 1998 for a similar procedure).

Team performance. Each team submitted a final report that had to include a thorough analysis of HR practices of an organization, which was the objective that the teams worked toward. The grades on this report represented team performance. The report was evaluated on three major dimensions: problem analysis (45%), solutions (45%), and presentation and illustration (10%). Two teaching assistants graded the reports, each being responsible for one half. The assistants were not aware of our research questions or hypotheses, and they had a clear grading scheme in which, for each dimension, there were three to four points and corresponding weight for each point. Thus, such grading, based on pre-determined rubrics, was designed to be as fair and objective as possible. The grades were assessed on a scale of 0 to 10 and ranged from 3.9 to 9.1.

Control variables. The students were enrolled in two academic programs, a Dutch one and the other international. Although the content of the course and the project that the students did were same across the two programs, in the Dutch program the course was taught in Dutch, and in the

international program the course was taught in English. To take into account the effect of program differences, we treated program as a nesting variable and used cluster-robust standard error (McNeish, Stapleton, & Silverman, 2017) in regression analysis. Also, team size was controlled for. We intended to form five-member teams. In the end, 93.8% of teams had five members, 4.5% four members, and 1.7% six members. We also controlled for the total amount of voice (i.e., voice density) when examining the effects of voice centralization on team performance. We did this for two reasons. First, given its association with distribution, density can act as an omitted variable (e.g., Wasserman & Faust, 1994). Second, with density controlled for, we can establish how distribution of voice has an impact beyond that of the volume of voice. Team voice density was operationalized by aggregating all members' ratings of one another's voice within the team and then dividing them by the possible maximum total amount of voice in the team (Borgatti et al., 2013).

Analytic Approach

To capture the temporal dynamics specified in Hypotheses 1 and 2, we used Random Coefficient Modeling (RCM) following the analytical procedures outlined by Bliese and Ployhart (2002). RCM allows estimations of the growth of variables (Ployhart & Vandenberg, 2010). In our study, voice centralization and competence of central voicers in teams were calculated at three time points. RCM helped us examine how such centralization and competence of central voicers changed (or grew) over those time points. Following Bliese and Ployhart (2002), we estimated the intercepts (which represent the initial status of a variable at the beginning of team interactions) and slopes (which represent the pace at which the

variable increased over the three time periods) that time had on voice centralization and central voicer competence, using the non-linear and linear mixed effect package ("nlme") in R (Pinheiro & Bates, 2000). To test Hypotheses 3 to 5, we relied on generalized least square regression with cluster-robust standard error (McNeish et al., 2017) to account for non-dependence of observations across Dutch and international programs. Specifically, to test Hypotheses 3 and 4, we extracted the intercepts and slopes of central voicer competence trajectory for each team that were derived from RCM in Hypothesis 2 testing, and used them as dependent variables in regression analyses with team openness or team conscientiousness as a predictor. The RCM approach has been employed in previous studies to avoid exceedingly complex multilevel models which often generate unstable estimates (e.g., Chen, Ployhart, Thomas, Anderson, & Bliese, 2011; Li & Tangirala, *in press*). Hypothesis 5 testing involves an interaction of t_3 voice centralization and central voicer competence on team performance.

RESULTS

Table 1 shows descriptive statistics and correlations for the focal variables. Table 2 presents the results for Hypotheses 1 and 2. Hypothesis 1 suggested that the voice centralization would increase over time. To test Hypothesis 1, we tested a random coefficient growth model where a time factor (designated as 0, 1, 2 for t_1, t_2, t_3) predicted the three voice centralization scores. Results revealed that there was a significantly positive linear trend for time on voice centralization (b = .02, SE = .01, p < .01), indicating that the voicing patterns within teams became more centralized over time of the study. The time factor accounted for 16.8 percent of the

variance of within-team voice centralization. Robustness checks indicated that considering the autocorrelation (Δ[-2*log-likelihood] = 0.20, *n.s.*) and heteroscedasticity (Δ[-2*log-likelihood] = 0.56, *n.s.*) did not significantly improve the model fit. Overall, this linear or general trend for time highlighted support for Hypothesis 1. Probing for the quadratic term for time indicated that it was significantly negative (b = -0.06, SE = .01, p < .01). This suggested that growth of voice centralization slowed down as time 3 approached (see Figure 2).

Insert Table 1, Table 2, and Figure 2 about here

Similar approach was used to test Hypothesis 2, which predicted a positive trend of central voicer's competence over time. Consistent with our prediction, the rate of central voicer's competence change was significantly positive (b = .09, SE = .02, p < .01), indicating that central voicers tended to become more competent over time of the study. The time factor accounted for 46.9 percent of the variance of within-team competence of central voicer. Modeling the autocorrelation and heteroscedasticity as exponent covariate additionally improved the fit of our model (Δ[-2*log-likelihood] = 16.02, p < .01). Overall, this linear or general trend for time supported Hypothesis 2. Probing for the quadratic term for time indicated that it was significantly negative (b = -0.10, SE = .03, p < .01). This implied that competence of the central voicer slowed down in its growth as time 3 approached (see Figure 3).

Insert Figure 3 about here

Hypotheses 3a and 3b predicted that team openness to experience is positively related to the initial placement (intercept) and the rate (slope) of placement of more competent members as central voicers in teams. From the analyses for Hypothesis 2, we extracted the intercepts and linear slopes (with autocorrelation and heteroscedasticity fixed) of central voicer's competence trajectory to use them as dependent variables. Regression results (see Table 3) revealed that team openness to experience was not related to the intercept (b = -0.01, SE = .08, *n.s.*), but positively related to the slope of the competence of the central voicer (b = 0.11, SE = .03, $p <$ .01). Hypotheses 4a and 4b predicted that team conscientiousness was positively related to the initial placement (intercept) and the rate (slope) of placement of more competent members as central voicers. The results indicated that team conscientiousness was positively related to the intercept (b = 0.28, SE = .11, $p < .05$), but not related to the slope of the competence of the central voicer (b = -0.04, SE = .09, *n.s.*). Hence, Hypotheses 3b and 4a were supported, but Hypotheses 3a and 4b were not.

Insert Table 3 about here

Hypothesis 5 posited that ultimate voice centralization in teams would be positively (negatively) related to team performance when the central voicer's competence is high (low). To test this hypothesis, we focused on ultimate centralization that the teams achieved in our case—that

is at t_3 in our sample. Moreover, as expected, either teams that right at the start managed to convince their competent members to speak up more, or those that over time were able to replace less competent members with more competent members as central voicers, were successful in having more competent members in most active speaking role at t_3 (the intercept of the relationship between time and competence of the most central voicer in the team and the slope of that relationship were correlated with competence of the central voicer at t_3 at .47, $p <$ .01, and .59, $p <$ .01, respectively). As revealed in Table 4, with team size, team voice centralization at t_1 and t_2, and the total amount of voice (i.e. team voice density) at t_3 controlled for, team voice centralization at t_3 and the competence of central voicer at t_3 interacted to predict team performance (b = 2.74, SE = 0.84, $p <$ .01). Without those control variables, the interaction effect remained similar (b = 2.62, SE = 1.02, $p <$ .05). Further, we plotted the interaction pattern. As shown in Figure 4, when the most central voicer's competence was higher, there was a significantly positive effect of voice centralization on team performance (b = 1.00, t = 4.45, $p <$ .001); in contrast, when the most central voicer's competence was lower, the relationship between voice centralization and team performance was significantly negative (b = -1.72, t = 2.07, p = .040). Additionally, as expected, there was no interaction between the extent of voice centralization at t_1 or t_2 and competence levels of the most central voicers at those times, implying that the effects of voice centralization begin to manifest only when they stabilize and teams reach mature phases of interaction where they can put voice to proper use in improving work practices or procedures (cf., Kozlowski et al., 1999). In combination, Hypothesis 5 was supported.

Insert Table 4 and Figure 4 about here

DISCUSSION

By integrating EST and RT, we developed a model of how voice centralization occurs within teams over time. In our study, we tracked student teams over time and found that: (a) early on, as teams just started working together, member voice was distributed in a relatively egalitarian manner but then increasingly centralized around a few members as teams developed an interactional history, (b) concomitantly, the likelihood that the members around whom voice centralized in the teams were more competent increased over time, (c) teams with higher conscientiousness were able to more effectively place competent members in central voicer roles early in team tenure, whereas teams with higher openness to experience were able to replace less competent people with more competent people in such roles as time progressed, (d) such initial placement and replacement over time were both associated with whether the teams ended up with more competent members at the helm as dominant speakers, and (e) in comparison to teams that had egalitarian voice distributions, teams that ultimately had more centralized voice distributions performed better when they centralized their voice around more competent members, and performed worse when they centralized their voice around less competent members. We discuss the theoretical implications of these findings below.

Theoretical Implications

Tracking voice over time. We highlight how voice distributions emerge within teams. Scholars have noted that voice can be unequally

distributed among members, and that distributions can have performance implications (Sherf et al., 2018; Woolley et al., 2010). However, we still know little about *how* such distributions emerge or *why* teams seek to do so. We longitudinally examine voice within teams and address these questions by demonstrating that, over time, voice distribution evolves from relatively egalitarian patterns to more centralized patterns; during this process, the teams tend to gradually centralize their voice around their more competent members, presumably as they want to rely on those members to come up with good ideas that direct the teams toward higher performance.

In doing so, we address calls for voice literature to move beyond studying static snapshots of voice and more explicitly unpack temporal dynamics involved in the voice process (e.g., Morrison, 2014) as such approaches can lead to misleading conclusions. For example, if voice distributions are only sampled in a static fashion in earlier phases of team interactions in studies, then scholars can arrive at the inappropriate conclusion that voice tends to be more equally distributed within teams than it usually is. They might alternatively fail to recognize how centralization tends to occur around more competent individuals within teams as that process typically becomes evident only after members spend time interacting with each other. Moreover, given that teams more effectively focus on collective performance in mature stages of team development (e.g., Kozlowski et al., 1999; Gersick, 1988) and the effects of voice centralization only begin manifesting at that time on team performance (e.g., in our study, voice centralization at t_1 and t_2 had no (conditional) effects on team performance but did at t_3), those scholars might deduce that voice centralization does not have strong performance implications while it

does so. Hence, static approaches to voice can ignore "temporal bracketing of its validity" (Zaheer, Albert, & Zaheer, 1999; also see Li & Tangirala, *in press*).

Additionally, examining voice over time enabled us to develop a nuanced understanding of the voice centralizing process. As Figures 2 and 3 indicate, voice centralization and central voicer competence both increased till around the mid-point and stabilized after that. However, when we probed these patterns further, we found that 77% of teams altered their central voicers from t_1 to t_2, and 59% of teams altered central voicers from t_2 to t_3. This indicated that although the *degree* of voice centralization began stabilizing after the mid-point, there was still flux in terms of whom voice was centralizing around as over half the teams changed their central voicers after the mid-point. The change might signal that though teams identify a set of about equally competent members around whom to centralize voice around, they can still adjust their selection of central voicers after the mid-point, perhaps based on the observed willingness of those competent members to pro-socially contribute to team functioning or the particular nature of skill they bring to the team in mature stages of development. Future research may more explicitly theorize about and examine such evolving processes of voice allocation in teams.

Team composition. We identify team composition in terms of member personality as an antecedent of teams' ability to place more competent members in central voicer positions. Extant research has shown that team composition can influence team processes and emergent states (Bell, 2007; Mathieu et al., 2008). We extend this research by demonstrating that team composition may also shape the pattern or

distribution of behaviors among members in a team. We highlight that teams consisting of open or conscientious members can create environments that make competent members feel that their voice is welcome and become motivated to take on central voicer positions. In this sense, we demonstrated that team openness and conscientiousness are related to how soon competent members take on central voicer positions or the rate at which teams replace less competent members with more competent members in such positions. Both these aspects were associated with competence of central voicers at t_3, which had an (moderating) influence on team effectiveness.

Additionally, results revealed that team conscientiousness was associated with the placement of more competent members in central voicer roles early in team interactions but not with the rate of replacement of less competent with more competent members in such roles over time. Whereas, team openness to experience was associated with the rate at which more competent members were placed as central voicers over time but not with their placement in those roles early in team interactions. Conscientious teams like order or structure (LePine, 2003). As centralizing voice around competent members is a process of building a type of structure, such teams might have been keen, from the beginning, on embarking on the process of building such structure to help the teams achieve task goals. Moreover, conscientious teams, due to their higher internal discipline (Bell, 2007), could have been better at more clearly and cogently communicating role expectations to competent members that they should speak up more than others. Hence, right from the start, conscientious teams might have been able to get competent members to embrace more prominent speaking roles.

Given that such efficient early placement of more competent members in central voicer roles leaves less space for growth later on, which can be evidenced by the correlation between the intercept and slope of central voicer competence trajectory at -.39, $p < .01$, it is possible that the rate of replacement of less competent with more competent members in central voicer roles over time was not significantly related to team conscientiousness. In contrast, open teams might not favor structure. Hence, such teams might have not been so effective in initially placing more competent members in central voicer roles, but over time the intellectual curiosity displayed by those teams might have more gradually encouraged more competent members to take on those roles. This may explain a positive link between team openness and slope of the relationship between time and central voicer competence instead of its intercept. Future research can further explore such potential reasons why more competent members embrace central voicer positions within teams and how alternative team attributes help teams better manage the voice centralization processes by explaining those reasons.

Functional account of voice centralization. We identify a functional reason for teams to seek voice centralization. Previous work has suggested that voice centralization prevents teams from properly utilizing the expertise of their members as some members gain disproportionate air time at the expense of others when voice is centralized (e.g., Sherf et al., 2018). Hence, this research has suggested that voice centralization, generally, negatively impacts team performance and at best teams can only seek to minimize such adverse effects. In contrast, we underscore that teams could benefit from centralization if they properly navigate the

process by providing greater opportunities for their competent individuals to speak up. Specifically, as teams develop over time, if they manage to ultimately place more competent members in central voicer positions, they tend to perform better as opposed to the teams which maintain egalitarian patterns of voice. This implies that voice centralizing tendencies within teams can be seen as a motivated process through which teams achieve desired outcomes.

Limitations and Future Research Directions

The current study has several limitations that highlight avenues for future research. First, we used a student sample, which would invite a question on the degree to which our findings can be generalized to organizational settings. However, the task confronting the students was to act as consultants identifying and solving problems for real organizations. As such, the students were actually working with people from the field and on real HR issues. Moreover, using such a student sample enabled us to achieve high response rates as well as ensure standardization in the measurement of team performance; these aspects allowed for stronger inferences from our data. Even so, current findings need to be replicated in real organizational settings by future research.

Second, relying on RT (Graen & Scandura, 1987; Katz & Kahn, 1965), we made an assumption that voice becomes centralized around competent members over time through role taking, role making, and role routinization. However, we did not directly examine these processes. Hence, several unanswered questions emerge from our study. For instance, do competent members have to first stake a claim for larger speaking roles in the team to be granted such roles by the rest of the team or does the

initiative lie with the rest of the team in convincing them to take on those roles (cf., DeRue & Ashford, 2010)? Explorations of such interpersonal dynamics can help us develop a more nuanced understanding of how central voicer roles come to be occupied by more competent members over time within teams.

Finally, besides team composition in personality factors, there can be alternative predictors of how effectively teams place competent members as central voicers. For example, team climate (e.g., psychological safety) or values endorsed by teams (e.g., meritocratic values) may also determine the extent to which more competent members become motivated to take on central voicer positions. Future research can examine such alternative predictors.

Managerial Implications

Teams should carefully navigate the process of voice centralization by seeking to encourage and persuade their highly competent members to take on larger speaking roles in the teams. That is, although voice centralization naturally occurs within teams, some teams manage that process well and improve their team effectiveness as a result; other teams mis-manage it and hurt their team effectiveness. Hence, teams need to be vigilant about how voice is getting distributed among their members and to ensure that the process is meritocratic and allows competent members to get placed in more prominent speaking roles.

Moreover, teams composed of members who are more open to experience or conscientious are more likely to persuade competent members to emerge as central voicers. Open teams likely motivate competent members to accept central voicing roles because such teams

display intellectual curiosity in exploring ideas that the competent members possess. Conscientious teams, due to their task focus, can encourage meritocracy within and likely make competent members feel welcome to speak up more. Hence, organizations, via their selection processes, could seek to ensure that members with the right personality attributes are selected to work within their teams.

CONCLUSION

We demonstrate that, over time, voice becomes centralized within teams and, especially, does so around their more competent members. There is, however, variability in the process such that teams composed of members with greater openness to experience or conscientiousness are able to better convince their competent members to take on more active speaking roles. Teams that ultimately ended up with more (less) competent members as more frequent voicers end up doing better (worse) than teams with egalitarian distributions of voice. Through our findings, we hope to stimulate more work on configurations (rather than mere levels) of voice within teams.

TABLE 1
Means, Standard Deviations, and Correlations among Variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Voice centralization t_1	.17	.09										
2. Voice centralization t_2	.25	.12	.13									
3. Voice centralization t_3	.20	.11	.10	.42*								
4. Competence of central voicer t_1	3.88	.55	.03	.01	-.13							
5. Competence of central voicer t_2	4.07	.46	.12	.18*	.09	.38*						
6. Competence of central voicer t_3	4.07	.52	.09	.14	.12	.50*	.62*					
7. Team conscientiousness t_0	.69	.27	.01	.02	.10	.15*	.17*	.10				
8. Team openness t_0	.96	.26	-.08	-.07	.07	-.06	.09	.09	.34*			
9. Team performance t_4	6.87	.89	-.10	-.04	-.03	.00	-.03	-.01	.02	.11		
10. Team size	4.97	.25	-.19*	-.14	-.19*	-.18*	-.13	-.12	-.12	.00	-.07	
11. Program	.44	.50	.09	.12	-.02	-.08	-.14	-.06	-.04	-.28*	-.36*	.10

Notes: n = 176 teams.
* $p < .05$.

TABLE 2
Effects of Time on Voice Centralization and Central Voicer Competence

Variables	Voice Centralization		Central Voicer Competence	
	Model 1	Model 2	Model 3	Model 4
Constant	0.19**(0.01)	0.17**(0.01)	3.91**(0.04)	3.88**(0.04)
Time	0.02**(0.01)	0.14**(0.02)	0.09**(0.02)	0.29**(0.07)
Time^2		-0.06**(0.01)		-0.10**(0.03)
Deviance (χ^2)	-848.06	-902.23	684.39	657.74
$\Delta\chi^2$		54.17**		26.65**

Notes: n = 176 teams; the standard errors in the estimations are reported in parentheses. Deviance is a measure of model fit, calculated as -2 × the log-likelihood of the maximum-likelihood estimate; the smaller the deviance, the better the model fit.
* $p < .05$, ** $p < .01$.

TABLE 3
Effects of Team Composition on Intercept and Slope of Central Voicer Competence Trajectory

Variables	Competence Trajectory Intercept				Competence Trajectory Slope			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	5.50**(1.18)	5.51**(1.26)	5.14**(0.94)	5.20**(0.95)	-0.14(0.09)	-0.25**(0.08)	-0.09*(0.04)	-0.17*(0.07)
Team size	-0.31(0.23)	-0.31(0.23)	-0.28(0.20)	-0.27(0.18)	0.04**(0.02)	0.04**(0.01)	0.04**(0.00)	0.03*(0.02)
Team openness		-0.01(0.08)		-0.13(0.13)		0.11**(0.03)		0.15*(0.07)
Team conscientiousness			0.28*(0.11)	0.32*(0.15)			-0.04(0.09)	-0.09(0.11)
F	5.77*(1,174)	2.88(2,173)	5.70**(2,173)	4.10**(3,172)	0.40(1,174)	1.64(2,173)	0.43(2,173)	1.70(3,172)
R^2	.03	.03	.06	.07	.00	.02	.01	.03

Notes: $n = 176$ teams; the standard errors in the estimations are reported in parentheses.
* $p < .05$, ** $p < .01$.

TABLE 4
Effects of Team Voice Centralization and Central Voicer's Competence on Team Performance

Variables	Team performance			
	Model 1	Model 2	Model 3	Model 4
Constant	8.85**(0.50)	8.92**(0.75)	8.92**(0.76)	8.95**(0.61)
Team size	-0.35**(0.07)	-0.36**(0.11)	-0.36**(0.10)	-0.37**(0.07)
Team voice density t_3	0.02(0.02)	-0.04(0.18)	-0.03(0.20)	0.05(0.20)
Team voice centralization t_1	-1.08(0.68)	-1.08(0.67)	-1.08(0.66)	-1.05(0.64)
Team voice centralization t_2	-0.28(0.14)	-0.22(0.30)	-0.21(0.29)	-0.39**(0.15)
Team voice centralization t_3		-0.22(0.57)	-0.21(0.58)	-0.23(0.66)
Competence of central voicer t_3			-0.01(0.03)	-0.00(0.06)
Team voice centralization t_3 × Competence of central voicer t_3				2.74**(0.84)
F	0.85(4,171)	0.69(5,170)	0.58(6,169)	1.22(7,168)
R^2	.02	.02	.02	.05

Notes: $n = 176$ teams; the standard errors in the estimations are reported in parentheses.
* $p < .05$, ** $p < .01$.

FIGURE 1
Overall Conceptual Model

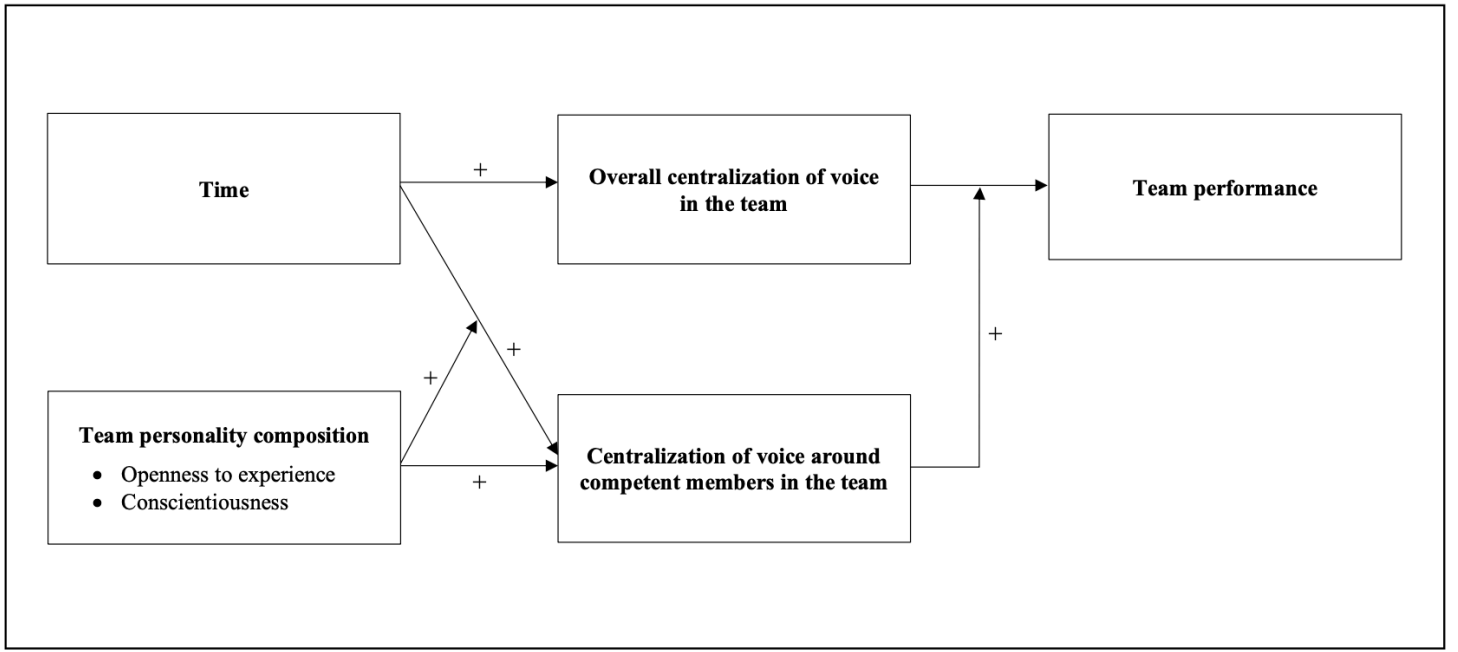


FIGURE 2
Curvilinear Effect on Voice Centralization Over Time

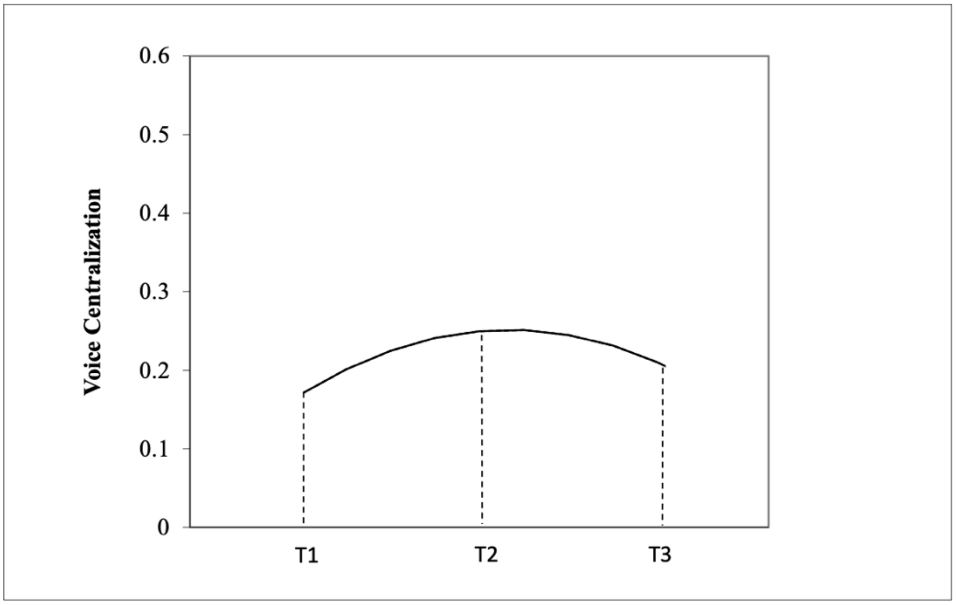


FIGURE 3
Curvilinear Effect on Central Voicer Competence Over Time

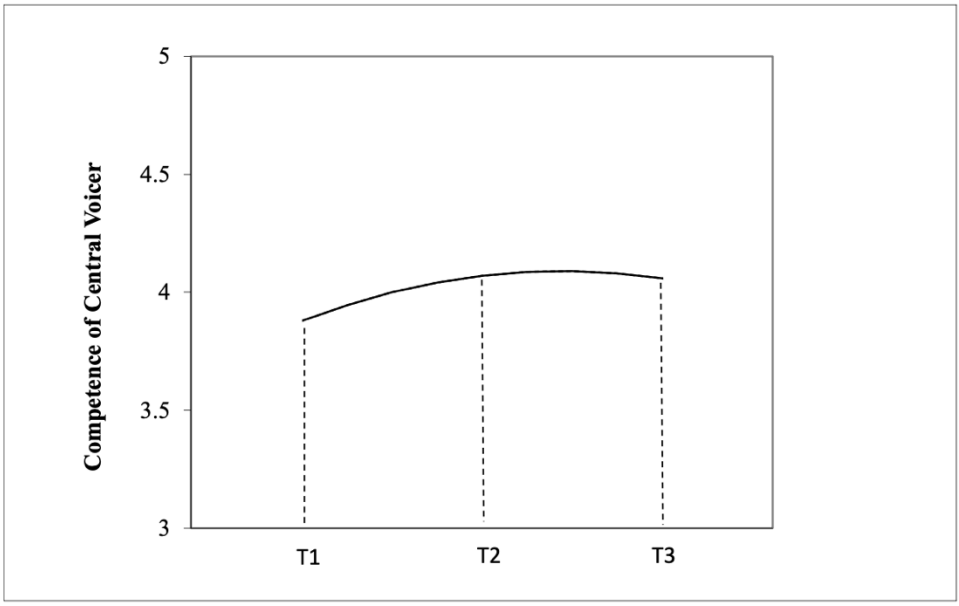
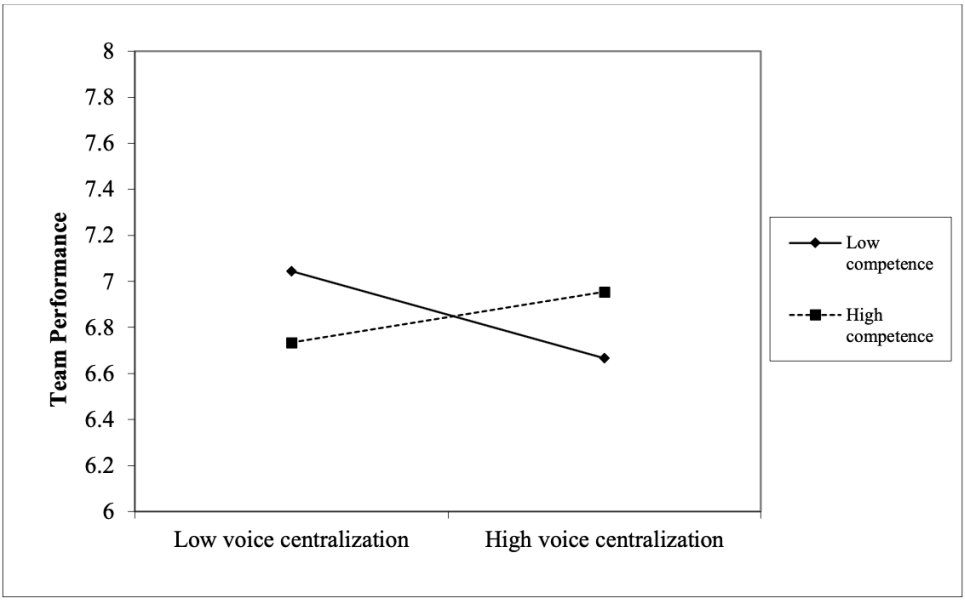


FIGURE 4
Interaction between Voice Centralization T_3 and Competence of Central Voicer T_3 on Team Performance



CHAPTER 5

General Discussion

It is believed that employee voice behavior would benefit collective functioning. Only in recent years have scholars started to examine if voice behavior actually benefits teams and, if so, how. The extant research on voice in teams, by and large, focused on either the overall amount of voice or the average level of voice that emanated in teams, assuming that the influence of voice was exerted on teams as a whole or voice was equally distributed among team members. Yet, voice might be better understood in a dyadic setting, and team members typically differ in expression of voice. To address these issues, this dissertation took a configural approach to further investigation of voice in teams. Although the three studies compiled in the dissertation can be approached independently of one another, they share the overarching research question: How voice is elicited or exerts influences within teams in the light of team configuration?

Summaries of the Main Findings and Contributions

In Chapter 2, we proposed a social identity perspective on the relationship between LMX (dis)similarity and leader-directed voice behavior and investigated the interactive effect of followers' self-other (dis)similarity in LMX and leader group prototypicality on follower's upward voice. We predicted that LMX positive dissimilarity was more predictive of voice with a less group prototypical leader, whereas LMX similarity was more predictive of voice with a more group prototypical leader, and that the interactive effects would be stronger for prohibitive voice than for promotive voice. The results from the field study largely

supported our predictions. This study enriched the extant literature in two important ways. First, we identified the social identity dimension to the LMX-voice relation by integrating LMX theory (Graen & Uhl-Bien, 1995) with the social identity theory of leadership (Hogg, 2001; van Knippenberg & Hogg, 2003) and thus built towards broader-ranging theories of leadership. Specifically, we argued that both similar LMX relationship and a more positive LMX relationship in comparison to the other team members could result in upward voice behavior. The critical contingency factor was the degree to which the leader embodies the team characteristics (i.e., leader group prototypicality) – rendering either similar or more positive LMX relationship a predictor of upward voice behavior. Second, extending prior research that distinguished prohibitive voice from promotive voice (e.g., Liang et al., 2012; Lin & Johnson, 2015; Wei et al., 2015), the study further contributed to the voice literature by testing the differential effect of LMX (dis)similarity and leader group prototypicality on the two forms of voice.

Chapter 3 cast light on cross-expertise voice, or voice that occurred between team members who have different expertise background, so as to better capture who voiced to whom in teams. This matters because whether voice occurs between similar or dissimilar team members would affect the effectiveness in communicating ideas to others, and voice might be better understood when being communicated to one or a few rather than all other team members. We examined how and when cross-expertise voice was likely to facilitate team performance. Building on relational energy theory (Owens et al., 2016) and self-categorization theory (Turner et al., 1987), we predicted that cross-expertise voice could benefit team performance via

fostering relational energy within teams, and that such indirect effect was more likely to occur when environment was less uncertain as opposed to more uncertain. The results were consistent with our hypotheses. Via this study, we recognized that cross-expertise voice had a unique impact on team performance beyond and above the volume of voice. This contributed to voice literature by adopting the configural approach to voice study. Specifically, we delved into the members around whom voice flew within teams considering the dissimilarity in expertise of dyads. Second, we identified relational energy as a mediation mechanism to further our understanding of how voice could exert positive influence within teams. Relational energy, as a form of motivational mechanism, played a unique role in getting team members to buy into raised ideas and mobilizing them to take actions. Further, we recognized environmental uncertainty as a condition under which cross-expertise voice was more likely to enhance team performance via relational energy, to emphasize the importance of business environment in which teams were embedded.

In Chapter 4, we treated voice centralization as a process that teams can proactively navigate instead of a phenomenon that naturally occurs in teams. Specifically, we unpacked how teams centralized their voice around more competent members to perform well and what kinds of teams tended to more quickly place highly competent members in central voicer positions. An integration of expectation states theory (Bales et al., 1951; Berger et al., 1985) and role theory (Katz & Kahn, 1965) suggests that task-oriented teams tend to strive for centralization, because they are inclined to defer to one or a few members and expect them to contribute more; when teams form such role expectation, they are likely to send the roles to right

persons and convince them to take on the roles. Hence, we predicted that voice would be centralized around more competent members over time in teams. Our predictions were supported: voice in teams became more and more centralized as time progressed, and it was centralized to more competent members ultimately. Furthermore, we found that teams that were open to experience or conscientious tended to more quickly have their competent members take on central voicer roles; and the teams who ended up with competent members occupying central voicer positions tended to perform better than those who did not. This chapter's main contribution lies with the adoption of a longitudinal approach. With this, we demonstrated that teams typically started off with a relatively egalitarian distribution of voice and moved toward centralization by having more competent member taking on central voicer positions. As such, we extended the research on voice distribution by explicating how voice became centralized within teams as well as why they strived for centralization. Also, we identified team openness and conscientiousness as critical factors that distinguished the teams who were better at quickly placing more competent members as central voicers.

Implications for Future Research

The above findings may provide some insights into voice literature as well as research on teams and leadership more broadly. In the following, I will discuss several implications for future research that stem from an integrated consideration of the three studies.

First, a key contribution of this dissertation is bringing a configural perspective to the investigation regarding the occurrence and influence of employee voice behavior in a team context. Taking the configural

approach, we a) examined how voice occurred in view of team configuration in LMX, reflected by the degree of similarity or dissimilarity between one's own LMX and coworkers' LMXs with the same leader (Chapter 2), b) studied the occurrence of voice intertwined with team configuration in expertise background and how cross-expertise voice could benefit team performance (Chapter 3), and c) unpacked how voice distribution became configured by centralizing the speaking turns around right persons so as to achieve good team performance (Chapter 4). As such, we establish a more accurate and nuanced understanding of how voice can be elicited and how voice exerts influences within teams. Follow-up research may further incorporate the configural perspective into voice study. For example, future research can examine how alternative forms of configuration in other predictors of voice, or how different forms of configuration in voice impact team processes and outcomes.

Second, Chapter 2 and 4 both speak to leadership literature. The study in Chapter 2 can be linked to the prior work on LMX differentiation (Li & Liao, 2014) in which the authors used the configural approach to distinguish four types of LMX dispersion that may occur in teams and examined how such LMX dispersion impacted team and individual performance. Future research may further apply the configural approach to a variety of leader behaviors, to advance our understanding of how leader's differentiated treatment could exert influences on teams or followers via leader behaviors. In Chapter 4, the findings on how self-managing teams centralized their voice relate to the extant work on the emergence of informal leadership (DeRue et al., 2015). These scholars highlighted that a centralized distribution of team member competence can result in a

centralized structure of leadership, and that a competent individual is more likely to emerge as a leader. We went beyond these conclusions by highlighting that teams proactively place competent members in critical positions, explicating how competent members take on these roles over time, and distinguishing what kinds of teams are better at placing competent members in these roles quickly. Future research may continue to examine the dynamic interplay between perceived competence and taking of central roles over time.

Third, the studies in Chapter 3 and 4 both contribute to literature on teams. Chapter 3 examined the occurrence of voice intertwined with team configuration in expertise background and studied how cross-expertise voice could benefit team performance. Chapter 4 focused on distribution of voice and how it was shaped over time within teams. As such, we moved beyond the prior research that focused on the overall or average amount of voice that happened within teams, by highlighting the importance of zooming in to investigate who voice to whom and how voice is distributed, in addition to the amount of voice. Future research may consider alternative dimensions of the social category, such as gender or functional background, and further examine how and when these forms of cross-boundary voice would impact team processes and effectiveness. Also, alternative patterns of voice dispersion can be of interest for future research directions.

Last, another critical implication lies with incorporating temporal element into voice study (Chapter 4). Specifically, we investigated how voice distribution became configured or structured within teams over time and its influences for teams, and explicated why teams strived for voice centralization by placing more competent members in central voicer

positions as time went by. The longitudinal perspective together with the configural approach has enabled us to not only examine how the structure of voice distribution evolved, but also to track who occupied central voicer positions from time to time. Our study also echoes the calling for the research that moves beyond a static view to unpack the temporal dynamics in voice processes and effects (e.g., Li & Tangirala, *in press*; Morrison, 2014). Future research may more explicitly theorize about and examine the temporal effect in the evolving process of voice distribution.

Conclusion

Employee voice behavior, or employee expression of ideas aimed at improving collective functioning or preventing harms from occurring, is regarded as a conduit to benefit teams or organizations. Taking a configural approach, this dissertation has attempted to further the investigation on the occurrence and influences of voice in a team context. Via three empirical studies, we found that: a) both having better LMX relationship with leader and having similar LMX could elicit leader-directed voice, and which route was more pronounced depended on leader group prototypicality, b) voice that occurred between the dyads who had different expertise background was likely to benefit team performance via creating relational energy in teams, and c) that teams tended to strive for voice centralization by centralizing voice around more competent members within teams over time, and open or conscientious teams were likely to quickly place competent members in more active speaking roles. We hope that the findings provide new insights into voice as well as other relevant literatures and provoke inspiration for future research endeavor.

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SUMMARY

Employee voice, or expression of ideas or opinions aimed at improving collective functioning, is believed to be conducive to teams and organizations. Though recent research has started to examine whether voice from employees can be turned into improved collective outcomes as defined and how, the extant research has assumed either that the influence of voice was exerted within teams as a whole, or that voice was distributed in an egalitarian fashion among team members. These assumptions have constrained us from developing a more accurate understanding of the pattern of voice that occurs within teams and how the voice pattern affects team process and effectiveness.

To address these issues, I take a configural approach to furthering investigation of voice in a team context in this dissertation. Specifically, I have attempted to unpack how configuration in antecedents may predict occurrence of voice behavior and how configuration of voice influences team process and effectiveness. Three studies of this dissertation examine (a) the antecedents of employee upward voice with a focus on dispersion in leader-member exchange (LMX) relationship, captured by self-other (dis)similarity in LMX, (b) how cross-expertise voice, or voice that occurs between members of different expertise backgrounds, affects team process and performance, and (c) how voice distribution gets structured within teams over time and how teams proactively navigate this process by placing right persons in more active speaking roles.

This dissertation enriches the extant literatures in three important ways. First, incorporating a configural perspective into research on voice in

teams, the dissertation contributes to voice literature by developing a more nuanced and accurate understanding of how voice can be elicited and how voice exerts influences within teams. Second, this dissertation contributes to literature on teams by studying how voice affect teams with team configuration in expertise taken into account and how voice get configured in teams over time. Third, this dissertation also contributes to leadership literature by examining the effect LMX dispersion on follower's leader-directed voice.

SAMENVATTING

Er wordt aangenomen dat de 'voice' (stem) van de werknemer, oftewel: het uiten van ideeën of meningen die zijn gericht op de verbetering van het collectieve functioneren, bevorderlijk is voor teams en organisaties. In recent onderzoek is bekeken of de voice van werknemers tot betere collectieve resultaten leidt, zoals hierboven genoemd, en op welke manier. In het bestaande onderzoek wordt echter aangenomen dat de invloed van voice binnen teams als geheel werd uitgeoefend of dat de voice in gelijke mate was verdeeld onder de teamleden. Deze aannames hebben ons weerhouden van het verkrijgen van een duidelijker inzicht in het patroon waarin voice zich binnen teams voordoet en de manier waarop dit patroon het proces en de effectiviteit van een team beïnvloedt.

Om deze reden ga ik in dit proefschrift op een configuratieve manier te werk om voice in teamverband verder te onderzoeken. Ik heb me in het bijzonder gericht op de manier waarop de configuratie van antecedenten een voorspellende waarde heeft voor het optreden van voice-gedrag en de manier waarop de configuratie van de voice van invloed is op teamprocessen en de effectiviteit van teams. De drie studies in dit proefschrift onderzoeken (a) de antecedenten van upward voice van werknemers, waarbij de aandacht ligt op de verdeling in de LMX-relatie (Leader-Member Exchange), bepaald door onderlinge verschillen of overeenkomsten binnen LMX; (b) op welke manier cross-expertise voice, dat wil zeggen: het type voice dat voorkomt tussen medewerkers met verschillende expertise-achtergronden, van invloed is op het teamproces en de prestaties; en (c) hoe de verdeling van voice binnen teams in de loop van

de tijd wordt gestructureerd en hoe teams proactief dit proces navigeren door actievere spreekrollen te geven aan de geschikte personen.

Dit proefschrift verrijkt de bestaande literatuur op drie belangrijke manieren. Ten eerste draagt dit proefschrift bij aan de literatuur over voice door de integratie van een configuratief perspectief in het onderzoek naar voice in teams. Er wordt een genuanceerder en nauwkeuriger begrip ontwikkeld van de manier waarop voice kan worden ontlokt en op welke manier voice invloed uitoefent binnen teams. Ten tweede draagt dit proefschrift bij aan de literatuur over teams door het bestuderen van de manier waarop voice invloed heeft op teams rekening houdend met verschillende expertises in de teamsamenstelling, en hoe voice in teams in de loop van de tijd vorm krijgt. Ten derde draagt dit proefschrift bij aan de literatuur over leiderschap door het onderzoeken van het effect van de verdeling in LMX op de voice van de medewerker die aan de leidinggevende is gericht.

ABOUT THE AUTHOR

Jing Wu was born and raised up in Nanjing, China. She is a doctoral candidate in Organizational Behavior at the Rotterdam School of Management, Erasmus University. During her PhD, she was a visiting scholar at the University of Maryland, College Park, in the US in 2017 and 2018. Prior to her PhD study, Jing obtained a Master degree in Business Management from Nanjing University and a Bachelor degree in Economics from Nanjing Xiaozhuang University in China.

Jing is curious to understand why employees remain silent while having opinions or suggestions to share and explore what managers can do to facilitate interpersonal communication at workplace. Her dissertation examines how employee voice behavior, or expression of ideas and opinions for improving collective functioning, is shaped and exerts influences in teams by taking team configuration into account. Specifically, she investigates what motivate followers to express true opinions to leader considering one's own and coworkers' relationships with the leader, how voice that occurs between dyads who have different expertise can be translated into facilitated team performance, and how voice distribution within a team evolves over time and how such voice distribution dynamics affect team performance. Jing has presented her work at international conferences such as Academy of Management Annual Meeting and New Directions in Leadership Research Conference. Her dissertation work is currently under review at the leading journals in management field.

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About Jing Wu

Jing Wu was born and raised up in Nanjing, China. She is a doctoral candidate in Organizational Behavior at the Rotterdam School of Management, Erasmus University. During her PhD, she was a visiting scholar at the University of Maryland, College Park, in the US in 2017 and 2018. Prior to her PhD study, Jing obtained a Master degree in Business Management from Nanjing University and a Bachelor degree in Economics from Nanjing Xiaozhuang University in China.

Jing is curious to understand why employees remain silent while having opinions or suggestions to share and explore what managers can do to facilitate interpersonal communication at workplace. Her dissertation examines how employee voice behavior, or expression of ideas and opinions for improving collective functioning, is shaped and exerts influences in teams by taking team configuration into account. Specifically, she investigates what motivate followers to express true opinions to leader considering one's own and coworkers' relationships with the leader, how voice that occurs between dyads who have different expertise can be translated into facilitated team performance, and how voice distribution within a team evolves over time and how such voice distribution dynamics affect team performance. Jing has presented her work at international conferences such as Academy of Management Annual Meeting and New Directions in Leadership Research Conference. Her dissertation work is currently under review at the leading journals in management field.

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