Social networks and employee voice: The influence of team members’ and team leaders’ social network positions on employee voice

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Abstract

We examine the role of employees’ and team leaders’ social network positions, an important, yet understudied class of variables, in affecting employees’ voice behaviors. Using multi-level, multi-source data from 185 employees nested within 43 teams and their team leaders, we find that employees who hold central positions in the formal, workflow network in the team are more likely to speak up with ideas and suggestions. This relationship is weakened when they are central to the team’s avoidance network. In addition to employees’ own network positions, team leaders’ positions in such informal networks also play a role in qualifying the employee workflow centrality–voice relationship. Specifically, the positive relationship between employees’ workflow centrality and their voice is strengthened when their team leaders occupy central positions in the friendship network, but is weakened when they are central to the avoidance network in the team. Implications for theory and practice are discussed.

1. Introduction

Employee voice – the expression of challenging but constructive opinions, concerns, or ideas about work-related issues (Detert & Burris, 2007; Tangirala & Ramanujam, 2008; Van Dyne & LePine, 1998; Whiting, Maynes, Podsakoff, & Podsakoff, 2012) – has been increasingly recognized as a critical input affecting organizational functioning and well-being (Edmondson, 2003; Morrison & Milliken, 2000). In understanding this phenomenon, prior research has shown employee voice to be affected by a variety of factors such as employees’ personal attributes (e.g., Crant, Kim, & Wang, 2010; LePine & Van Dyne, 2001), perceptions about and attitudes toward the organization (Fuller et al., 2006; Liang, Farh, & Farh, 2012; Tangirala & Ramanujam, 2008) and the behaviors of leaders (Detert & Burris, 2007; Liu, Zhu, & Yang, 2010; Tangirala & Ramanujam, 2012).

Although this prior research has made considerable progress, one important area that has, surprisingly, gone largely unexplored relates to the “effects of one’s colleagues and relationships with one’s colleagues on the decision of whether to engage in voice” (Morrison, 2014, p. 191). Employee voice inherently challenges the status quo and points to needs for changing or improving processes and procedures that may have been instituted by other team members or the team leader and might potentially affect others’ work. As a result, speaking up with one’s concerns and ideas may entail substantial risk for employees (Milliken, Morrison, & Hewlin, 2003; Van Dyne & LePine, 1998) unless they also have supportive relationships with their coworkers and leaders and know that speaking up is viewed as appropriate by them. Thus, the study of employee voice would be quite incomplete without understanding how social and relational factors at work may influence such behaviors.

In addressing this gap, the current paper uses a relational, social network framework in examining how employees’ and their leaders’ formal and informal relationships at work may impact employee voice. Compared to most other research in the social sciences (including that of employee voice) that takes an atomistic or “individual as an independent entity” perspective (i.e., focusing on individual attributes such as personality traits), network theory argues that an individual’s behaviors (such as voice) can be best understood by taking a relational perspective (i.e., studying the nature of individuals’ dyadic relationships and structural positions in the network of such relationships; Borgatti, Brass, & Halgin, 2014).

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This is because interconnected social relationships strongly shape an individual’s immediate environment by constraining or providing access to social and other resources that are unequally distributed in the social system, and that are beyond the effects of their individual attributes, such as dispositions, alone (e.g., Borgatti et al., 2014; Lin, 1982, 2001; Wellman, 1988). For example, employees’ workgroup identification, an individual attribute, has been shown to be important for employee voice (Tangirala & Ramanujam, 2008). However, regardless of identification levels, an employee who does not have many friends in the team may still feel constrained in openly challenging the status quo or voicing concerns or ideas, potentially because the employee may feel that other team members may not attach credibility to his/her ideas and therefore, would not support him/her. Thus, studying the effects of employees’ positions in formal and informal relationship networks with coworkers adds a layer of richness and complexity to our understanding of employee voice in terms of highlighting situational opportunities and constraints beyond the effects of individual attributes and leader behaviors that have been the focus of prior voice research.

In examining the effects of such workplace relationships, we first examine how an employee’s central position (e.g., connecting and mediating unconnected parts of the team; Freeman, 1979) in the formal workflow network, which exposes them to diverse aspects of the team’s work practices, is related to their voice (e.g., Venkataramani & Tangirala, 2010). However, being central in workflow network may not be sufficient unless such ideas are welcomed and supported by the broader team. Following Morrison’s (2014) call, we go beyond merely work related interactions and also examine how employees’ positions in the workflow interact with their positions in the informal positive and negative social networks in the team (i.e., friendship and avoidance networks). In doing so, we use social resources theory (Lin, 2001) as our underlying theoretical framework. Social resources theory argues that in addition to informational resources, network relationships provide access to social resources such as support, signal credibility to others and provide cues about the appropriateness of certain behaviors. Along these lines, we focus on friendship and avoidance networks because they form the understructure of most organizations and capture employees’ access (or lack thereof) to important social resources outside of the formal work structure (Brass, Galaskiewicz, Greve, & Tsai, 2004; Chua, Ingram, & Morris, 2008; Labianca & Brass, 2006; Venkataramani & Dalal, 2007), which can be critical factors influencing employees’ voice.

Further, given the important role of leaders in facilitating (or inhibiting) employee voice (Burris, 2012; Detert & Treviño, 2010) and recent research that highlights the benefits of leaders’ embeddedness in their team’s informal social networks (e.g., Mehra, Dixon, Brass, & Robertson, 2006; Venkataramani, Richter, & Clarke, 2014), we also examine how leaders’ positions in friendship and avoidance networks impact the relationship between employees’ workflow centrality and their voice, beyond the effects of employees’ own network positions. Fig. 1 illustrates our theoretical model.

The relational, network perspective we take in this study offers some important and unique insights into the employee voice literature beyond that of past research. First, as discussed above, taking a relational perspective highlights the fact that voice is not an isolated behavior driven solely by individual attributes, but is embedded in, and influenced by, an interconnected social structure of other relationships. Relatively, this perspective illustrates how variations in access to scarce resources through social networks can provide opportunities and constraints beyond the effects of individual characteristics in affecting behavior (Wellman, 1988). Second, and more important, using a relational lens highlights the importance of specific social mechanisms underlying employee voice that have not received much attention in the voice literature. For example, as social resources theory (Lin, 2001) argues, social relationships can provide cues regarding the appropriateness of voice in specific situations. Similarly, central network positions affect one’s recognition as a member of the team, and thereby public acknowledgement of one’s ideas as well as one’s claim to certain resources that support these ideas. Furthermore, social ties provide signals of an employee’s social credentials (or lack thereof) to leaders and other organizational authorities (Lin, 2001), which can help in accessing additional resources in supporting their suggestions, thus increasing their voice behaviors. In addition to employees’ own network positions, team leaders’ embeddedness in the team’s informal networks also serve to signal the salience of power differentials between leaders and members and whether the leader may be supportive of their speaking up and would be able to garner collective support in moving ideas forward. Applying this relational (as compared to an individualistic) lens to studying employee voice thus provides some unique insights beyond that of past research. Finally, this research contributes to the network and leadership literatures by examining the interactive effects of employee and leader network positions and illustrating how the effects of employee network relationships may be incomplete without also studying the role of other interpersonal relationships around them (cf. Venkataramani, Green, & Schleicher, 2010; Venkataramani et al., 2014).

2. Theory and hypotheses

2.1. Social networks and employee voice

A social network is the set of actors and the set of ties/relationships connecting them (Scott, 2000). Although multiple types of dyadic ties coexist within organizations, two broad subsets of such ties (based on the content of the relationship) have proven to be especially important in predicting many organizational outcomes (e.g., Brass, 1992; Ibarra & Andrews, 1993): instrumental ties (e.g., workflow, advice) and expressive ties (e.g., positive and negative). In this paper, we examine how employees’ central positions in the network of formal, instrumental work ties—i.e., who interacts with whom in terms of providing inputs or outputs in completing the team’s tasks—affect their voice, and how this effect of workflow centrality is qualified by their informal expressive positive and negative relationships. In addition to employees’ own positions in the team’s informal, expressive networks (i.e., friendship and avoidance networks), we examine team leaders’ positions in such networks.

2.1.1. Employees’ centrality in the team’s workflow network

Recent reviews of voice suggest that existing research has not empirically examined employees’ exposure to different parts of the team’s workflow processes and different types of work issues (Morrison, 2014; cf. Venkataramani & Tangirala, 2010). In this regard, employees’ structural positions (i.e., centrality) in the network of formal workflow interactions in the team can indicate such exposure. Centrality, as the term suggests, indicates the extent to which an individual is central or critical/imporant to the interactions in the network, and thereby have access to resources that flow in the network (Borgatti, 2005). For example, as part of their required work responsibilities, when individuals receive work inputs from different team members and provide them as (processed or unprocessed) outputs for other members, they serve as liaisons connecting these different individuals who may be from different parts of the team, or from different expertise areas. Without these central individuals, employees from different parts of the team would be disconnected. In other words, these central...
employees serve as “critical hubs” for the transfer of work-related resources from one part of the team to another and in facilitating the team’s operations (Wasserman & Faust, 1994). In the course of such interactions, connecting people who do not directly interact with each other due to the way that the team task work is structured, these focal individuals are exposed to information, problems and issues from different parts of the team (Borgatti, 2005). Further, such employees develop a more integrative understanding of work-related issues as they get to see those issues from the perspectives of different members of the team (Brass, 1984). Therefore, these individuals in central workflow positions are well-positioned to not only observe problems, but also to identify solutions and opportunities for improving existing processes as well as constraints in implementing them (e.g., Baldwin, Bedell, & Johnson, 1997), and thus, should be more likely to speak up with them. We propose

**Hypothesis 1.** Employees’ centrality in the workflow network in the team will be positively related to the frequency of their voice behaviors.

### 2.2. The role of employees’ informal network relationships

Although work-related relationships facilitate exposure to work issues, they also reflect existing formal hierarchy and pre-specified task distributions. Therefore, one’s positions in these workflow networks alone may not be sufficient for voice behaviors that may introduce controversy (Gibbons, 2004; Sias & Cahill, 1998). For example, openly challenging or discussing problems with specific team processes that may affect other team members’ responsibilities and roles in the team may be risky unless one also feels that raising these issues would be supported by others. In this regard, employees’ positions in the informal friendship and avoidance networks in the team may facilitate or inhibit the effects of their workflow network positions on voice.

#### 2.2.1. Employees’ centrality in the team’s friendship network

Friendship is a broad construct that parsimoniously captures elements of liking, trust and closeness (e.g., Gibbons & Olk, 2003; Kilduff & Brass, 2010), which are important characteristics of employees’ informal relationships at work (e.g., Brass, 1984; Gibbons, 1996; Krackhardt, 1992). Centrality in the friendship network in the team indicates the extent to which a focal employee is considered to be a friend by other team members (Bell, 2005; Freeman, 1979), and can strengthen the relationship between employees’ workflow centrality and voice due to several reasons. First, centrality in the friendship network signals to employees that they are valued as members of the team and that their ideas would be heard and acted upon by others who are likely to be affected by these changes. Second, open interactions with friends on such matters likely help employees obtain social cues and signals regarding the appropriateness of voicing their concerns and potentially help employees contextualize and reframe problems (e.g., Erickson, 1988). Third, as social resources theory (Lin, 2001) argues, being in central network positions provides public acknowledgement of one’s claim to certain team resources in implementing these ideas. In addition, such positions also signal the credibility of such employees to supervisors and other organizational authorities in securing support and additional resources. Thus, when employees who are central in the workflow network also hold central positions in the friendship network in the team, they are more likely to speak up.

**Hypothesis 2a.** Employees’ centrality in the team’s friendship network will moderate the positive relationship between employees’ workflow centrality and their voice such that the relationship will be stronger when friendship network centrality is higher.

#### 2.2.2. Employees’ centrality in the team’s avoidance network

Negative ties, such as avoidance relationships, are characterized by dislike and avoidance of one individual in the dyad by another (Labianca & Brass, 2006; Venkataramani & Dalal, 2007). Such ties, although fewer than positive ties, can still become significant liabilities for employees and can adversely affect discretionary behaviors such as voice (e.g., Venkataramani & Dalal, 2007). We propose that employees’ centrality in the negative ties network in the team (i.e., the extent to which a focal individual is the target of negative ties from several other team members) can weaken the effects of their workflow centrality on voice. First, prior research has shown that one’s centrality in negative networks is associated with lower acceptance and acknowledgement from team members and in turn, lower organizational attachment and greater
withdrawal (e.g., Venkataramani et al., 2014), which are important determinants of voice. Therefore, even when employees are central in workflow network, those who are also disliked by other team members are unlikely to voice their suggestions in trying to improve team functioning. Second, negative ties often lead other team members to personalize any conflict with the focal person and engage in efforts to harm them both overtly and covertly (e.g., Pondy, 1967; Pruitt & Rubin, 1986). Thus, individuals central to the workflow, but who are disliked by many team members, are likely to receive strong social cues that discourage them from voicing their opinions. Third, negative ties with team members can adversely affect one’s recognition and acceptance as a legitimate member of the team, and in turn, refusal by other members to publicly acknowledge one’s ideas (Lin, 2001), thereby discouraging voice. Finally, as research on the social liabilities of negative ties indicates, centrality in the negative network provides signals of an employee’s lack of social credibility in the team to leaders and other authorities (Lin, 2001), which are necessary in accessing resources in moving ideas forward (e.g., Pauksztat, Steglich, & Wittek, 2011). Therefore, even when such work central employees may have important things to contribute, they are unlikely to speak up.

**Hypothesis 2b.** Employees’ centrality in the team’s avoidance network will moderate the positive relationship between employees’ workflow centrality and their voice such that the relationship will be weaker when avoidance network centrality is higher.

### 2.3. The role of leaders’ informal network relationships in the team

Although a relational perspective examining employees’ interpersonal relationships on voice is important, it is incomplete without also examining the interpersonal relationships of team leaders who are an integral part of the team’s social fabric, and have an important role in shaping the climate and outcomes of their teams. In line with recent research that has documented the various benefits associated with leaders’ embeddedness in the informal social networks of their teams (e.g., Balkundi, Barsness, & Michael, 2009; Balkundi & Harrison, 2006; Mehra et al., 2006), we suggest that leaders’ positions in the team network serve as boundary conditions that either facilitate or constrain the effect of employee workflow network centrality on employee voice. Although employees’ own positions may provide them access to social resources, leaders, by virtue of their role as the formal head of the team, have legitimate power and authority in determining whether employee voice will be penalized or whether resources will be allocated to act upon their suggestions. In this regard, when the formal leader also holds important informal positions, this can help leaders more effectively garner social resources in the team and mobilize collective support in implementing new ideas.

#### 2.3.2. Leader’s centrality in the team’s avoidance network

We propose that leaders’ centrality in the team’s negative network will weaken the effects of employees’ workflow centrality on voice. Often times, leaders are the ones that have instituted or enacted procedures and practices in the team and therefore have a sense of responsibility and ownership over them (Detert & Burris, 2007). Prior research suggests that leaders may feel threatened by information that challenges their authority, because it might imply that things are not working optimally or require change in behavior or practice (Detert & Burris, 2007; Kish-Gephart et al., 2009) and hence become defensive when employees speak up with concerns and potential solutions. When leaders have many negative relationships in the team, this signals to employees that team leaders would react defensively and be less receptive to new ideas and suggestions challenging these work practices. These cues from leaders about their lack of openness or willingness to act are likely to reduce central employees’ actual voice behavior even if they have valuable suggestions to offer (Detert & Edmondson, 2011; Milliken et al., 2003). Further, leaders, by virtue of their role as the formal head of the team, also have the power to determine employees’ punishments as well as rewards (French, Raven, & Cartwright, 1959). When leaders have many negative ties in the team, their behaviors are more likely to be seen as signals of potentially using this power to retaliate with sanctions and punishments toward subordinates. Thus, when those employees who are central in workflow network work with leaders who have more negative relationships in the team, they are less likely (than those who work with leaders who have few negative relationships) to speak up.

**Hypothesis 3b.** Leaders’ centrality in the team’s avoidance network will moderate the relationship between employees’ workflow centrality and voice such that the positive relationship will be weaker when leaders’ avoidance network centrality is higher.
3. Method

We tested our hypotheses with data from employees working in project teams in a construction management company in China. Their job tasks included project scheduling, communicating with different stakeholders (e.g., contractors, designers, and property owners), dealing with problems encountered during construction, and preparing contracts and agreements with various business parties. Each team consisted of several employees who reported to one team leader. Given the interdependent nature of their work, employees interacted frequently with each other on work matters. Team members (including team leaders) also engaged in informal social interactions, such as going to lunch and attending social events together.

Employee voice was extremely relevant and important in this setting. Given the rapidly expanding and increasingly competitive nature of this industry, it was important for the organization to constantly challenge existing practices and come up with new ideas for products, services and processes. For example, team members might find the planned construction sequence or specific ideas for products, services and processes. For example, team members (including team leaders) also engaged in informal discussions about projects and planning, including ideas for products, services and processes.

In our study, we asked team leaders to rate the voice behaviors of employees on a 5-point scale, with 1 being “very low” and 5 being “very high.” Based on the high response rates (e.g., 80%) required, we calculated the weighted in-degree centrality of node v as

\[
I(v) = \sum_{j=1}^{n} \frac{g_{ij}}{\sum_{k=1}^{n} g_{kj}}, \quad i \neq j \neq k
\]

Therefore, it is an index of liaising between individuals who are not directly connected. Compared to other conceptualizations such as a simple count of the number of employees one directly interacts with for work (e.g., degree centrality; Venkataramani & Tangirala, 2010), betweenness is a more accurate indicator of being exposed to information from different parts of the team (e.g., Burt, 2004; Perry-Smith, 2006).

In order to calculate the betweenness centrality, each employee was asked, “Which of the following persons do you interact with as part of your routine work role (i.e., in terms of those who provide you with work inputs, or to whom you provide your work outputs)” about all other team members (Morrison, 2002). Responses of all team members (in terms of “yes” or “no”) resulted in a network matrix wherein each cell indicated the row person’s (respondent’s) response about a column person (i.e., ratee; another team member or team leader). The matrix was provided as input for the betweenness centrality routine in the UCINET software program.

3.1. Measures

At Time 1, the employee and team leader surveys included a network survey as well as a brief set of attitudinal and demographic measures. At Time 2, leaders rated the voice behaviors of their employees. As is common in network research (e.g., Marsden, 1990), a roster of all team members and the leader in each team was provided, and employees as well as their team leaders were asked to answer specific questions about each person. We measured all network variables using one question each. All network measures were calculated using the UCINET software (version 6.289; Borgatti, Everett, & Freeman, 2002) typically used in network analysis.

3.1.1. Employee workflow centrality

In line with our theoretical arguments, this was measured as the employee’s betweenness centrality in the workflow network (e.g., Burt, Kilduff, & Tasselli, 2013). Betweenness centrality is calculated as a ratio of the number of times a focal person (k) lies on the shortest paths connecting any pair of individuals (i and j) in the team to the total number of such shortest paths that connect them (e.g., Borgatti, 2005). Specifically, if g_{ij} is the number of geodesics (i.e., shortest length) paths from i to j, and g_{ijk} is the number of these geodesics that pass through node k, then the betweenness centrality of node k is given by

\[
\sum_{i \neq j \neq k} \frac{g_{ijk}}{g_{ij}}, \quad i \neq j \neq k
\]

3.1.2. Employee centrality in the team’s friendship network

In line with our arguments related to the number of friendship ties that an individual has in the team, this was measured as the employee’s in-degree centrality in the team’s friendship network (i.e., the number of team members who consider a focal employee as their friend; Freeman, 1979; Kilduff & Krackhardt, 1994). Friendship networks were measured by asking respondents to assess their relationship with each member of their team including the leader (using the team roster provided) asking: “Which of the following persons do you interact with as part of your routine work role (i.e., in terms of those who provide you with work inputs, or to whom you provide your work outputs)” about all other team members (Morrison, 2002). The matrices containing these values for each team were used in the UCINET program to arrive at the valued in-degree centrality of each individual. This program sums the weighted values of the incoming ties to an individual. In other words, a focal person’s in-degree centrality is calculated as the sum of all other team members’ ratings about him/her. Thus, high in-degree centrality is an indicator of the informal status an individual has in the friendship network (Ibarra, 1992; Knöke & Burt, 1983; Wasserman & Faust, 1994).

3.1.3. Employee centrality in the team’s avoidance network

In line with our arguments about the number of team members who preferred to avoid/not interact with this person (Venkataramani et al., 2014), this was measured as the employee’s in-degree centrality in the avoidance network in the team.
Following prior research (e.g., Labianca, Brass, & Gray, 1998), the avoidance network was measured by asking respondents to answer the question, “Which of the following individuals do you normally prefer to avoid/don’t like to interact with at work?” The in-degree centrality was calculated by summing the number of incoming ties to an individual.

3.1.4. Leader centrality in the team’s friendship network

The same procedure used for the calculation of employees’ centrality in the friendship network (discussed above) was used to calculate leaders’ in-degree centrality in the friendship network.

3.1.5. Leader centrality in the team’s avoidance network

The same procedure used for the calculation of employees’ centrality in the avoidance network (discussed above) was used to calculate leaders’ in-degree centrality in the avoidance network.

3.1.6. Employee voice

Four items adapted from the voice scale of Van Dyne and LePine (1998) were used to obtain team leaders’ ratings of employees’ voice. Specifically, leaders reported on the frequency with which their subordinates engaged in voice on work-related issues. A sample item is: “This employee made recommendations about ways to improve work in your team.” All ratings were on a five-point Likert-type scale ranging from 1 (never) to 5 (very frequently). Cronbach’s alpha for this scale was .88.

3.1.7. Control variables

In demonstrating the incremental predictive power of relationships at work, we controlled for several categories of variables that have been shown to affect voice. First, in terms of demographics, we controlled for employees’ age, gender, years of education, and tenure in the current role in the team (e.g., LePine & Van Dyne, 1998; Stamper & Dyne, 2001; Tangirala & Ramanujam, 2012). For instance, it is possible that employees who have spent more time in their current role have greater familiarity with team processes that might enhance their confidence to speak up at work. Second, in terms of individual attitudes and behaviors important for voice, we controlled for employees’ identification with their team (i.e., their feeling of oneness with their team and their desire to help their team perform effectively; e.g., Tangirala & Ramanujam, 2008) and their extent of work withdrawal or psychological detachment (e.g., Burris, Detert, & Chiaburu, 2008). Identification was measured using five items adapted from Mael and Ashforth’s (1992) scale. A sample item is: “When I talk about my team, I usually say ‘we’ rather than ‘they’” (1 = Strongly disagree to 5 = Strongly agree). Withdrawal was measured using Hanisch and Hulin’s (1990) 4-item scale. A sample item is: “How often do you make excuses to go somewhere to get out of work?” (1 = Never to 5 = More than once per week).

Third, the focus in this paper is on employees’ exposure to issues, ideas and problems from different parts of the team by virtue of their liaison positions (i.e., betweenness centrality) in the workflow network. In demonstrating the incremental predictive power of this operationalization, we controlled for employees’ indegree centrality in this network, which has been shown to be related to voice in prior research (Venkataramani & Tangirala, 2010). Fourth, given that team size has been linked to employees’ voice within that team (LePine & Van Dyne, 1998), and in order to also control for the size of the network in comparing employees’ centrality scores across teams, we controlled for team size.

Finally, given our focus on leader network positions as well, we also controlled for leader-related variables such as tenure with the leader, LMX (Detert & Burris, 2007; Liu et al., 2010) and leader fairness (e.g., Tangirala & Ramanujam, 2008), that are important predictors of voice (Van Dyne, Kamdar, & Joireman, 2008). LMX was measured from the subordinate in the LMX dyad (e.g., Erdogan & Enders, 2007), using the LMX7 measure (Scandura & Graen, 1984). A sample item is, “I can count on my team leader to ‘bail me out’, even at his/her own expense, when I really need it”. Leader fairness was measured using a four item overall fairness measure developed by Ambrose and Schminke (2009). A sample item is: “Overall, I am treated fairly by my team leader” (1 = Strongly Disagree to 5 = Strongly Agree).

3.2. Analytical approach

Employees in our sample were clustered within teams, each headed by a leader. To account for the non-independence of observations in this data, we employed random coefficient modeling for hypotheses testing (Raudenbush & Bryk, 2002), using HLM software (version 6.06) with Restricted Maximum Likelihood Estimation.

4. Results

Table 1 provides the means, standard deviations, reliabilities and bivariate correlations among the study variables at Level 1 and Level 2. As this table indicates, employee voice was significantly correlated with employees’ education, their LMX. Interestingly, employees’ indegree centrality in the friendship and avoidance networks were positively correlated with each other, suggesting that individuals who had many positive ties also tended to attract more negative ties, possibly because, when one’s popularity increases, it can also engender greater negative feelings from others who do not consider the focal person as a friend. A Chi-square test showed that the between-group variance in employee voice ($\chi^2 = 88.79, p < .01, ICC[1] = .21$) was significant, thus justifying the use of cross-level predictors. To test our hypotheses, we specified intercepts-as-outcome, and intercepts-and-slopes-as-outcome models (Raudenbush & Bryk: Table 2). In order to avoid confounding cross-level and between-group interactions, we group-mean centered the Level 1 predictors (Enders & Tofghi, 2007; Hofmann & Gavin, 1998). Control variables and Level 2 predictors were grand-mean centered (Raudenbush & Bryk, 2002). Table 2 presents the results of our HLM analyses. An examination of Table 2 (Model 1) suggests that, in line with prior research, there were significant main effects of employee education, LMX and leader fairness on employee voice.

4.1. Hypothesis testing

Hypothesis 1, which predicted that employees’ workflow centrality would be positively related to their voice behavior, was supported (Table 2, Model 1; $\gamma_{100} = .02, p < .05$). It is interesting to note that employees’ betweenness centrality was significant even after controlling for the indegree centrality operationalization (Venkataramani & Tangirala, 2010), indicating the incremental predicting power of employees’ liaison positions.

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1 Following other recent research (e.g., Detert & Burris, 2007; Liu, Tangirala, & Ramanujam, 2013; Tangirala & Ramanujam, 2012), we used four items from Van Dyne and LePine’s (1998) six-item employee voice scale. As Liu et al. (2013) argue, the two items that were not included did not directly capture verbal communication but instead focused on more general proactivity of the employees: “This particular employee often keeps well informed about issues where his or her opinion might be useful to this work group,” and “This particular employee often gets involved in issues that affect the quality of work life here in this group.”

2 Because our Level 1 predictors were group-mean centered, we also added their group means back at Level 2 and re-ran all our analyses in assessing the cross level interactions (Hofmann & Gavin, 1998). This yielded consistent results as reported in the manuscript.
Hypothesis 2a proposed that employees’ centrality in the friendship network in the team would moderate the relationship between their workflow centrality and voice such that this relationship would be stronger when positive centrality is higher. As Model 2 indicates, this interaction was not significant (γ119 = .004, p > .05). Thus, H2a was not supported.

Hypothesis 2b proposed that employees’ centrality in the avoidance network would moderate the relationship between their workflow centrality and voice such that this relationship would be weaker when negative centrality is higher. As Model 2 indicates, this interaction term was significant (γ150 = −.02, p < .05). A simple slopes test indicated that the relationship between employees’ workflow centrality and their voice was positive for members who were less central (i.e., −1SD; γ150 = .05, p < .01) whereas it was not significant for those members who were more central in their team’s avoidance network (+1SD; γ150 = .02, p > .05). Thus, H2b was supported. The plot depicting this interaction is presented in Fig. 2.

Hypothesis 3a predicted that leaders’ centrality in the friendship network would moderate the relationship between employees’ workflow centrality and their voice such that this relationship would be stronger when leaders’ centrality is higher. As Model 3 indicates, this cross-level moderation effect was not significant (γ131 = .01, p < .01). This interaction is depicted in Fig. 3. A simple slopes test indicated that the relationship between employees’ workflow centrality and their voice was weaker when leaders were more central in their team’s avoidance network (+1SD; γ132 = −.12, p < .05) as compared to when leaders were less central (−1SD; γ132 = .05, p < .01). Thus, H3b was also supported.

5. Discussion

In the current paper, we examined how employees’ and their leaders’ centrality in the social networks in their team influenced these employees to speak up with concerns and suggestions about the team’s work practices. In line with our arguments, we found that employees who occupied central, liaising positions in the team’s workflow network were more likely to voice. We further found that this positive relationship was strengthened when their leaders held central positions in the team’s friendship network, but was weakened when the employees themselves or their leaders were central in the team’s avoidance network. Taken together, these findings have several important implications.

5.1. Theoretical and practical implications

At a broad level, the current paper highlights the importance of a relational perspective for the study of employee voice, which has been relatively unexplored in past research. Previous research has tended to predominantly focus on individual (i.e., attributes, predispositions, psychological factors) and contextual factors (e.g., leader behaviors, climate) as antecedents of voice. However, this approach has overlooked the fact that employees are embedded in a network of interconnected relationships with other team members and that when an employee openly speaks up with concerns about or suggesting new work procedures in coworkers’ tasks, it might also be affected by the nature of his/her relationships with these coworkers. Along these lines, a relational perspective suggests that individuals’ positions in their social network provide the opportunities for, as well as exert constraints on, their behaviors and that these positions shape individuals’ behaviors.

We re-ran all our analyses with a dichotomized measure of friendship ties (for both leaders and members), where the friendship matrix was dichotomized such that all ratings of 3 and 4 were coded as 1 and other ratings were coded as 0. This did not change our results.
beyond the effects of their individual attributes and other contextual factors (e.g., Borgatti, Mehra, Brass, & Labianca, 2009; Kilduff & Krackhardt, 1994; Lin, 2001). In supporting this, the current paper demonstrates the effects of relational factors on employee voice above and beyond the effects of individual (e.g., demographic attributes, identification with the workgroup, withdrawal) and leadership related (e.g., LMX, leader’s fairness) factors. It would therefore be productive for future research to continue to examine voice from a relational perspective.

### Table 2

Results of HLM analysis predicting employee voice.

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Coeff.</th>
<th>s.e.</th>
<th>Model 2 Coeff.</th>
<th>s.e.</th>
<th>Model 3 Coeff.</th>
<th>s.e.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intercept (γ00)</strong></td>
<td>2.98*</td>
<td>0.09</td>
<td>2.99*</td>
<td>0.08</td>
<td>2.98*</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>Main effects: Level 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (γ10)</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Gender (γ20)</td>
<td>0.21</td>
<td>0.13</td>
<td>0.22</td>
<td>0.14</td>
<td>0.20</td>
<td>0.14</td>
</tr>
<tr>
<td>Education (γ30)</td>
<td>0.05</td>
<td>0.02</td>
<td>0.06</td>
<td>0.03</td>
<td>0.05</td>
<td>0.02</td>
</tr>
<tr>
<td>Tenure in current position (γ40)</td>
<td>-0.07</td>
<td>0.05</td>
<td>-0.07</td>
<td>0.05</td>
<td>-0.09</td>
<td>0.04</td>
</tr>
<tr>
<td>Tenure with leader (γ50)</td>
<td>0.06</td>
<td>0.05</td>
<td>0.06</td>
<td>0.04</td>
<td>0.08</td>
<td>0.04</td>
</tr>
<tr>
<td>Workgroup identification (γ60)</td>
<td>-0.12</td>
<td>0.15</td>
<td>-0.14</td>
<td>0.15</td>
<td>-0.14</td>
<td>0.14</td>
</tr>
<tr>
<td>LMX (γ70)</td>
<td>0.12</td>
<td>0.07</td>
<td>0.11</td>
<td>0.08</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>Leader fairness (γ80)</td>
<td>0.36</td>
<td>0.17</td>
<td>0.37</td>
<td>0.15</td>
<td>0.36</td>
<td>0.15</td>
</tr>
<tr>
<td>Employee indegree centrality in workflow N/W (γ170)</td>
<td>0.04</td>
<td>0.02</td>
<td>0.03</td>
<td>0.02</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Employee friendship N/W centrality (γ210)</td>
<td>-0.01</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Employee avoidance N/W centrality (γ220)</td>
<td>0.09</td>
<td>0.04</td>
<td>0.01</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
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<tr>
<td>Employee betweenness centrality in workflow N/W (γ230)</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
<td>0.02</td>
<td>-0.04</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Main effects: Level 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Team size (γ01)</td>
<td>0.001</td>
<td>0.05</td>
<td>-0.01</td>
<td>0.05</td>
<td>-0.05</td>
<td>0.05</td>
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<tr>
<td>Leader friendship N/W centrality (γ270)</td>
<td>-0.01</td>
<td>0.02</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.01</td>
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<tr>
<td>Leader avoidance N/W centrality (γ280)</td>
<td>0.09</td>
<td>0.19</td>
<td>0.10</td>
<td>0.17</td>
<td>0.05</td>
<td>0.18</td>
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<tr>
<td><strong>Level 1 interaction terms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee workflow centrality × friendship N/W centrality (γ150)</td>
<td>0.004</td>
<td>0.004</td>
<td>0.01</td>
<td>0.004</td>
<td>0.013*</td>
<td>0.004</td>
</tr>
<tr>
<td>Employee workflow centrality × avoidance N/W centrality (γ160)</td>
<td>-0.02*</td>
<td>0.004</td>
<td>-0.013*</td>
<td>0.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cross level interaction terms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee workflow centrality × leader friendship N/W centrality (γ510)</td>
<td>0.01*</td>
<td></td>
<td></td>
<td></td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Employee workflow centrality × leader avoidance N/W centrality (γ512)</td>
<td>-0.15*</td>
<td></td>
<td>-0.15*</td>
<td></td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td><strong>Level 1 ΔR²</strong></td>
<td></td>
<td></td>
<td>0.03</td>
<td></td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td><strong>Level 1 R²</strong></td>
<td>0.35</td>
<td></td>
<td>0.38</td>
<td></td>
<td>0.38</td>
<td></td>
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<tr>
<td><strong>Level 2 ΔR²</strong></td>
<td>0.06</td>
<td></td>
<td>0.00</td>
<td></td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td><strong>Level 2 R²</strong></td>
<td></td>
<td></td>
<td>0.06</td>
<td></td>
<td>0.14</td>
<td></td>
</tr>
</tbody>
</table>

*Note: N at Level 1 = 185; N at Level 2 = 43. N/W = Network. Level 1 and Level 2 R² values indicate percentage of explainable Level 1 and Level 2 variance respectively in the dependent variables accounted by each of the models (Snijders & Bosker, 1999). p < .05. p < .01.*

**Fig. 2.** Interaction plot of employee workflow centrality and employee avoidance network centrality predicting voice.

**Fig. 3.** Interaction plot of employee workflow centrality and leader friendship network centrality predicting voice.
to study voice from a network perspective, studying both formal and informal networks in tandem.

Third, and related, the current paper indicates (albeit not examine empirically) some unique relational mechanisms affecting voice. Prior research has indicated mechanisms such as perceived instrumentality of voice, psychological safety and perceptions of efficacy (e.g., Detert & Treviño, 2010; Liang et al., 2012) as underlying voice behaviors. At a basic level, although relational factors might merely seem to represent a new class of antecedents of these previously studied psychological processes underlying voice (e.g., when the leader is friends with many team members, employees in workflow central positions speak up more, probably because they might feel psychologically safe in expressing their ideas openly), they also shed light on some unique mechanisms, including signaling processes and access to resources, which have not been examined before in the voice literature. For example, as network research argues, individuals’ structural positions determine access to scarce social resources that are unevenly distributed and therefore, provide opportunities for, and constraints on, behavior (Wellman, 1988). Along these lines, individuals’ strategic positions in the workflow network might expose them to useful information about opportunities and choices otherwise not available. Similarly, individuals with many negative relationships with teammates are not recognized as legitimate members of the team, which is necessary to provide public acknowledgement of their ideas as well as for their claims to team resources. In fact, they may just be perceived as troublemakers and their voice not accorded any credibility, thereby reducing their voice behaviors even when they have important ideas or concerns. Relatedly, social relationships can provide social cues regarding the appropriateness of engaging in challenging behaviors such as voice. Finally, social relationships also provide signals of an employee’s social credentials to leaders and other organizational authorities (Lin, 2001), which can help in accessing additional resources in moving their ideas forward. Similarly, leaders’ embeddedness in the team’s positive tie networks, such as friendship networks, serves to signal lower power and status differentials between employees and the leader (e.g., Kish-Gephart et al., 2009), which encourages speaking up and increases confidence that the leader would be successful in influencing other members to accept new ideas and securing resources for their implementation. Thus, using a relational perspective can shed light on other, unique mechanisms that can potentially impact voice beyond that of past findings. It would be productive for future research to more directly examine them.

Fourth, this study makes a contribution to the broader network literature, where prior research has tended to predominantly focus on the social capital benefits of positive ties without also exploring the negative consequences associated with negative ties that employees invariably have at work (Labianca & Brass, 2006). However, as our findings as well as other recent research shows (e.g., Chua et al., 2008; Venkataramani et al., 2014), negative ties (e.g., avoidance network ties), although not as frequent as positive ties, can be especially important by attenuating the relationship between positive or neutral workplace interactions and work outcomes. Thus, this paper contributes to the growing network literature on negative relationships at work and extends it by demonstrating how centrality in the negative relationship network can extend to employees suppressing their voice even when such speaking up may be beneficial to the team.

Finally, this paper also contributes to the emerging literature that links leadership to voice. Although some prior research has examined LMX (Van Dyne et al., 2008) and specific leader behaviors such as consultation (Tangirala & Ramasujam, 2012) on their employees’ voice, the study of the effect of leaders’ social network in the team is still uncharted. In this context, as our results
indicate, leaders’ network ties can facilitate or constrain the effects of employees’ workflow centrality on voice over and above the effects of employees’ own ties. By virtue of their unique position as a “linking-pin” connecting their subordinates to higher organizational authorities (Likert, 1961), leaders mediate the flow of resources down the hierarchy. When such leaders are also strongly embedded in the team’s informal friendship network, it is possible that they could use their formal positions to garner external resources to help employees move their ideas forward. Further, given their formal positions, they also have the authority to reward or punish employees if they feel that employee voice is being disruptive. In this regard, leaders’ informal connections in the team can provide important signals to employees regarding the consequences of speaking up. Thus, building on and extending recent research on leaders’ ties in the team (e.g., Mehra et al., 2006; Venkataramani et al., 2014), the current paper demonstrates the incremental importance of leaders’ positions in informal social networks within the team beyond the effects of subordinates’ own positions in affecting voice. Further, by examining the interactive effects of employees’ and leaders’ network positions, we also highlight how the study of the impact of employees’ interpersonal relationships on their voice would be incomplete without also considering the role of other interpersonal exchange relationships around them (cf. Venkataramani et al., 2010, 2014).

One potential question that arises from these results relates to the role of employees’ direct dyadic exchange relationship (i.e., LMX) with the leader. We would like to note here that we did control for LMX while testing all our hypotheses; network positions were related to voice beyond the effects of LMX. However, it is possible that employees who are central to the team’s workflow will be likely to speak up more if they also have a higher quality LMX with their leader. We tested for this possibility in the form of a two-way interaction effect, but did not find support. Further, it is also likely that the facilitating (or constraining) effects of employees’ and leaders’ central positions in the teams’ networks may be strengthened (or weakened) in the presence of a high quality LMX. In exploring this, we tested for all possible three-way interactions among these variables. However, none of these three-way interactions were significant, possibly due to low power in our sample to detect them. It is also possible that other moderating factors not measured in this study, such as employees’ role perceptions (Van Dyne et al., 2008), could affect the interaction effect between LMX and network positions on employee voice. This would be a fruitful area for future research.

Some unexpected relationships in this data are also noteworthy. We did not find support for the moderating effect of employee friendship network centrality on the workflow network centrality–voice relationship (i.e., H2a). Perhaps, the effect of friendship centrality on the workflow centrality–voice relationship is further qualified by other factors not examined in this study. For example, given that voice behavior is associated with risk and individuals may be concerned about losing friends by challenging the status quo, employees with high agreeableness or risk aversion tendencies may still choose to not speak up even if they occupy central positions in the workflow as well as friendship networks. Similarly, it is possible that these relationships are further qualified by the type of issues that employees choose to speak up with. For example, such central employees might be comfortable raising issues related to suppliers and customers, but not regarding issues that might have direct implications in terms of affecting other team members (e.g., distribution of workload). These would be interesting areas for future research.

In addition to the lack of support for H2a, we did not find main effects of employees’ (or leaders’) centrality in the friendship network on voice. It might be possible that regardless of their own, or their leaders’ centrality, employees refrained from speaking up unless they had something useful to share (by virtue of their exposure to such issues due to their central positions in the workflow), or if they felt that the group climate or team norms strongly discouraged challenging the status quo, thus indicating the presence of other moderators. On the other hand, although employees’ negative centrality was not correlated with voice, our main effects model (Model 1, Table 2) indicates that it was positively related to voice in the presence of other controls. It would be interesting for future research to further examine these relationships and their boundary conditions in detail.

5.2. Limitations and directions for future research

Overall, we believe that the current study has several strengths such as utilizing multi-source data, controlling for different categories of variables in order to isolate the effects of our focal variables and testing our model using appropriate methods that matched the nested and multi-level nature of our data. Despite these notable strengths, our study has some limitations.

First, although we used a temporally lagged design in measuring our independent and dependent variables, we are unable to completely rule out reverse causality in our proposed relationships. For example, it is possible that employees who speak up more often are given more central positions in the team’s workflow. We urge more longitudinal network research to unravel the causal relationships between employee voice and their workflow network positions.

Second, we argued that the study of network positions highlight certain unique relational mechanisms underlying voice, such as signaling credibility and legitimacy, providing access to social resources and providing cues regarding the appropriateness of voice behaviors. However, given the difficulty in measuring processes such as signaling and social cue effects in a survey design, we were unable to directly examine these mechanisms. Nonetheless, it would be productive for future research to empirically demonstrate these mechanisms using ethnographic or experimental designs.

Third, due to time constraints, we measured some of our network questions using dichotomous (yes/no) measures and restricted our network boundaries to that of employees’ respective teams. It is possible that using a dichotomized measure for avoidance network (i.e., a negative network) decreased the variation in the responses, as individuals who had any negative interaction was likely to respond “Yes”. Despite this possible decrease in variation, this study was able to detect effects of centrality in avoidance networks. Nevertheless, we urge future research to use valued measures where possible in replicating these findings, as well as to examine individuals’ positions in the overall organizational network of communication relationships, which might provide greater access to resources for voice.

Fourth, given our Chinese sample, it is not clear how cultural factors might influence these findings. For example, it is possible that collectivists emphasize interpersonal relationships more and thus are more likely to speak up when they are central in positive relationship networks. However, it is also possible that collectivists might speak up less when they have central positions in positive relationship networks because they do not want to upset these relationships. Similarly, individuals who are high on power distance are likely more tolerant of unequal power structures and therefore, not affected if leaders are not central in the team’s social networks. On the other hand, it is also possible that employees who expect power differentials are more sensitive to leaders’ positions in informal networks, thereby speaking up more. Future empirical research is needed to unravel these possibilities.
5.3. Practical implications

Our results indicate that employees who are central to the task interactions in their group are more likely to articulate work-related suggestions or opinions, but that such central employees are less likely to voice their opinions if they are the target of avoidance of other team members. In this regard, our findings complement research by Casciaro and Lobo (2005), who found that employees prefer to work with "lovable fools" than "competent jerks", by showing that "competent jerks" also speak up less, likely because other members might not support them. We concur with Casciaro and Lobo that managers should leverage the opportunities and remove constraints for work central individuals to promote their speaking up and improving team performance. This suggests that managers should ensure that such central employees (and especially those who are both work central and socially unpopular) are given adequate opportunities to voice their opinions via behaviors such as consulting and seeking feedback.

In addition, team leaders may themselves also need to develop more informal friendship relationships with their team members through social events. This may help create a positive perception in the minds of employees that their team leader is approachable, and will help in persuading other members in implementing good ideas. Further, given our results regarding the constraining effects of leaders' avoidance network centrality on their employees' voice, these leaders may also need to take special care to ensure that their behaviors and actions do not alienate team members or make them feel unsafe in voicing their ideas.

6. Conclusion

Taking a relational perspective, this study shows that employees who are central, in terms of connecting otherwise unrelated actors in the workflow network of a team are more likely to speak up. Extending previous research examining network positions and voice behaviors, this study also suggests that when team leaders have more positive relationships (i.e., friendship) with team members, the positive association between employee workflow centrality and voice is stronger. In contrast, when employees or their team leaders have more negative (i.e., avoidance) relationships with team members, the positive effect of employees' centrality in the workflow network on voice is diminished. Taken together, this study contributes to the voice, social network, as well as leadership literature by demonstrating that both informal and formal networks among both subordinates and leaders should be taken into consideration, to understand and shape employees' voice behaviors.

References
