

RESEARCH REPORT

Speaking Up in Groups: A Cross-Level Study of Group Voice Climate and Voice

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Despite a growing body of research on employee voice—defined as the discretionary communication of ideas, suggestions, or opinions intended to improve organizational or unit functioning—the effects of shared or collective-level cognitions have received scant attention. There has also been relatively little research on voice within work groups. Our goal in this study was to address these important gaps by focusing on the effects of group-level beliefs about voice (i.e., group voice climate) on individual voice behavior within work groups. We conducted a cross-level investigation of voice behavior within 42 groups of engineers from a large chemical company. Consistent with our hypotheses, group voice climate was highly predictive of voice and explained variance beyond the effects of individual-level identification and satisfaction, and procedural justice climate. Also consistent with predictions, the effect of identification on voice was stronger in groups with favorable voice climates. These findings provide evidence that voice is shaped not just by individual attitudes and perceptions of the work context, as past research has shown, but also by group-level beliefs. The results also highlight the importance of broadening our conceptual models of voice to include shared cognitions and of conducting additional cross-level research on voice.

Keywords: employee voice, work group climate, multilevel analysis, employee extrarole behavior

Employee voice refers to the discretionary verbal communication of ideas, suggestions, or opinions with the intent to improve organizational or unit functioning (Greenberg & Edwards, 2009; Van Dyne & LePine, 1998). Scholars have argued that voice can lead to better decisions, ensure that problems are identified and addressed, and facilitate collective learning (Detert & Burris, 2007; Morrison & Milliken, 2000). They have also suggested that voice is especially important in the context of work groups (LePine & Van Dyne, 1998). Because groups are characterized by interdependence, shared responsibility, diffuse expertise, and divergent perspectives, their effectiveness depends on members sharing knowledge and speaking up with suggestions and opinions (Mesmer-Magnus & DeChurch, 2009; Nemeth, Connell, Rogers, & Brown, 2001). However, as many researchers have argued, group members often do not share their opinions, ideas, and concerns, and such an absence of voice can have serious negative implications for group performance (e.g., Argyris, 1991; Janis, 1972; Perlow & Williams, 2003).

In light of the above, it is important that we understand the factors that encourage and impede employee voice behavior within work groups. Although researchers have made important strides in identifying factors that influence voice, the majority of that research has focused on voicing “up the hierarchy” (e.g., Burris, Detert, & Chiaburu, 2008; Detert & Burris, 2007; Tangirala & Ramanujam, 2008b). Yet findings from research on voice to a higher authority cannot necessarily be generalized to voice directed at fellow work-group members (Kish-Gephart, Detert, Trevino, & Edmondson, 2009). Furthermore, most of the research on employee voice, including research on voice within work groups (e.g., LePine & Van Dyne, 1998, 2001), has been at the individual level of analysis and been focused on the effects of individual attitudes, dispositions, and perceptions.¹ A full understanding of voice, however, also requires insight into group-level predictors. That is, it requires research that combines the individual and group levels of analysis.

In this article, we combine these two levels of analysis to examine how shared beliefs about speaking up, together with individual-level attitudes, relate to voice behavior within work groups. Numerous studies have provided evidence that behavior is shaped not only by individual-level attitudes, dispositions, and perceptions but also by shared perceptions, beliefs, and states that exist at the level of the group (e.g., Lindell & Brandt, 2000;

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¹ A notable exception is Tangirala and Ramanujam (2008a), which looked at the interactive effects of procedural justice climate and several individual-level factors on self-reported silence.

Naumann & Bennett, 2000). Moreover, in a recent review of the voice literature, Greenberg and Edwards (2009) argued that voice behavior is “influenced by factors inherent in the social dynamics of the workplace” (p. 282) but that the role of such factors has been neglected and is in need of empirical study.

In sum, there has been little research on voice within work groups, and the work that has been done has largely ignored the impact of collective-level perceptions and beliefs about the social context. Our objective is thus to expand the voice literature by investigating the impact of shared beliefs about speaking up on voice behavior within work groups. We refer to these shared beliefs as *group voice climate*.

The idea that there are shared beliefs related to voice has been suggested in the literature but not systematically investigated. In a theoretical paper on organizational silence, conceptualized as the collective absence of voice, Morrison and Milliken (2000) introduced the term *climate of silence*. They defined it as a state existing when there are widely shared beliefs that speaking up with suggestions or information about problems is futile and dangerous. In introducing this construct, they suggested that shared beliefs about voice can develop within the workplace. We agree yet believe that there is value in examining not only negative beliefs (i.e., voice is futile and dangerous) but the full continuum of beliefs about the safety and efficacy of speaking up. We argue that shared beliefs about voice range along a continuum, from extremely positive (i.e., speaking up is very safe and worth the effort) to extremely negative (equivalent to Morrison and Milliken’s climate of silence).

Theoretical Background and Hypotheses

Employee Voice

Consistent with several recent studies (Burris et al., 2008; Detert & Burris, 2007; Detert & Trevino, 2010; LePine & Van Dyne, 1998; Tangirala & Ramanujam, 2008b; Van Dyne & LePine, 1998), voice is defined here as the discretionary communication of ideas, suggestions, concerns, or opinions intended to improve organizational or unit functioning. Voice challenges current processes and decisions and, as a result, carries some risk to the actor (Detert & Burris, 2007). Yet it is intended to be constructive for the work unit or organization (LePine & Van Dyne, 1998). Before engaging in voice, individuals weigh the potential risks and benefits of this behavior (Detert & Burris, 2007). One important influence on such calculations, we argue, are the collectively held beliefs about voice within the individual’s immediate environment.

Voice Climate: Shared Beliefs About Speaking Up

Climate refers to collective beliefs or perceptions about the practices, behaviors, and activities that are rewarded and supported in a given work environment (Kuenzi & Schminke, 2009; Takeuchi, Chen, & Lepak, 2009). Following Schneider’s (1990) argument that climate should be regarded as a construct having a particular referent, much of the research over the past decade has focused on facet-specific workplace climates, such as customer service climate (Schneider, White, & Paul, 1998), procedural justice climate (Colquitt, Noe, & Jackson, 2002), and innovation climate (Anderson & West, 1998), in addition to more generalized

climate perceptions (e.g., James & James, 1989; Schulte, Ostroff, Shmulyian, & Kinicki, 2009). Studies have shown that workplace climate is empirically distinct from individual perceptions and attitudes and explains variance in behavior beyond that accounted for by individual perceptions and attitudes (Naumann & Bennett, 2000; Schulte, Ostroff, & Kinicki, 2006).

As noted, Morrison and Milliken (2000) argued that organizations can develop climates about speaking up or not speaking up. Although their focus was at the organization level, climate research has shown that shared beliefs also form at the level of the work group and that work unit climate can have a particularly strong effect on behavior (see Kuenzi & Schminke, 2009, for a review). In keeping with this body of research, our focus here is on group voice climate.

We conceptualize group voice climate as having two dimensions. The first is a shared belief about whether speaking up is safe versus dangerous (i.e., group voice safety beliefs). This cognition is a form of outcome expectancy (Ashford, Rothbard, Piderit, & Dutton, 1998) and is consistent with work suggesting that individuals often believe that they may be punished for raising sensitive issues or for threatening the status quo (Detert & Burris, 2007; LePine & Van Dyne, 1998; Milliken, Morrison, & Hewlin, 2003). Group voice safety beliefs relate to psychological safety, or beliefs about whether a particular context is safe for interpersonal risk taking (Edmondson, 1999). However, they focus specifically on the perceived safety of speaking up with concerns or suggestions, as opposed to other forms of interpersonally risky behavior.

The second dimension of group voice climate is a shared belief about whether group members are able to voice effectively (i.e., group voice efficacy). Building from the more general notion of group efficacy, defined as the group’s beliefs in its capability to perform a particular task (Gibson & Earley, 2007), group voice efficacy is defined here as the shared belief about the group’s capability to voice. In groups where members feel that they can communicate effectively and that their input will be taken seriously and acted upon, voice efficacy will be high. Conversely, group voice efficacy will be low when members feel the opposite.

Although we recognize that groups may hold a variety of shared beliefs about speaking up or not speaking up (i.e., not just safety and efficacy beliefs), our decision to conceptualize voice climate in terms of these two beliefs stems from the existing literature. Work at the individual level of analysis has consistently highlighted these as the primary beliefs at the root of voice behaviors (Ashford et al., 1998; Detert & Trevino, 2010; Withey & Cooper, 1989). As this is the first study to investigate shared beliefs about voice, we believe that it is important and appropriate to build from this individual-level research. Second, our conceptualization builds from Morrison and Milliken’s (2000) model, which currently provides the only systematic discussion of shared beliefs about speaking up at work. As noted, they defined a “climate of silence” as existing when there are shared beliefs that voice is ineffective and unsafe and, in so doing, suggested that safety and efficacy beliefs are the primary collective cognitions that develop around voice. Moreover, they presented these beliefs as being highly related, having similar antecedents and effects on voice, and being reflective of a unitary climate construct.

How do these shared beliefs about speaking up develop? In their foundational paper on climate formation, Schneider and Reichers (1983) argued that climate originates from a process of collective

sensemaking, whereby employees try to gain an understanding of workplace demands, constraints, and outcome contingencies by interacting with one another and exchanging information. More recent work on climate (e.g., Young & Parker, 1999; Zohar & Tenne-Gazit, 2008), as well as research on socially shared cognition considered more broadly (Thompson & Fine, 1999), has similarly highlighted the importance of day-to-day social interactions for the development of collective beliefs and perceptions. Drawing from this work, we argue that group voice climate develops as a result of social interactions and collective sensemaking. In addition, it is likely that leadership style and leader behavior play an important role in the development of voice climate, as group leaders can send strong signals about the likely consequences of voicing (Detert & Trevino, 2010). Shared beliefs about the safety and efficacy of voice are also likely to be shaped by vicarious learning and salient events in the history of the group, such as an instance where a group member spoke up and was chastised (Milliken et al., 2003).

Effects of Group Voice Climate on Voice Behavior

Researchers have argued that under conditions of uncertainty, people are especially susceptible to the influence of socially shared information (Cialdini, 2001; Schulte et al., 2006). As noted, voice has uncertainty associated with it (LePine & Van Dyne, 1998). Thus we argue that, when deciding whether to voice, individuals will be especially likely to be influenced by collective beliefs about the potential consequences of this behavior. That is, if an individual receives social cues suggesting that group members view voice as something that can be done safely and effectively, he or she will be more likely to share suggestions and concerns.

We maintain as well that voice climate will have an effect on voice behavior even when individual-level attitudes are taken into account. That is, irrespective of individual attitudes that may affect voice behavior, employee voice may also be affected by shared beliefs operating at the collective level. Support for this argument comes from both the voice and climate literatures. LePine and Van Dyne (1998) argued that context (i.e., situation) is likely to have an effect above and beyond person-centered antecedents of voice, because "situations provide direct stimuli as well as the context for interpreting other stimuli and therefore have the potential to influence behavioral responses directly and indirectly" (p. 857). In the climate literature, Naumann and Bennett (2000) argued that shared beliefs are a critically important source of information for group members, providing cues about probable consequences of different courses of action. They and others (Naumann & Bennett, 2000; Schneider & Reichers, 1983; Schulte et al., 2006) explain how these shared beliefs can explain significant variance in behavior, beyond that accounted for by individual perceptions, attitudes, and motivations.

The two individual-level variables that we include in this study are satisfaction and work group identification: attitudes that research suggests are especially important in the context of an individual's motivation to voice within the work group. LePine and Van Dyne (1998) argued that people who are satisfied with their work group will feel a stronger sense of obligation to the group and thus be more motivated to invest effort into communicating opinions and ideas that will help the group to perform well. In addition, research has shown that, because highly identified

individuals perceive a strong connection between the group and their sense of self and define themselves in terms of group membership (Ashforth & Mael, 1989; Hogg & Abrams, 1988), they are especially likely to contribute in positive ways to the group (Blader & Tyler, 2009; Janssen & Huang, 2008). One important way in which they can do so is by sharing ideas, opinions, and recommendations. Indeed, Tangirala and Ramanujam (2008a) found that individuals who are not highly identified with the group are more likely to refrain from voice.

We expected, then, that satisfaction and identification would relate to voice but that beyond these individual-level attitudes, group voice climate would have a strong effect on voice behavior. Members of groups with collectively held beliefs that voice is safe and something that group members can do effectively will be more likely to speak up when they have potentially valuable input to share, whereas members of groups with collectively held beliefs that voice tends to be ignored or punished will be less likely to contribute their input to the group.

Hypothesis 1: Employee voice behavior will be positively related to the favorability of the work group voice climate, and this relationship will hold above and beyond the effects of individual satisfaction and identification.

Moderating Effect of Voice Climate on Individual-Level Relationships

As noted above, past research suggests that individuals who are highly satisfied or identified with their work group will feel a stronger attachment and sense of obligation to the group and thus be more motivated to invest effort into communicating opinions and ideas that will help the group to perform well (LePine & Van Dyne, 1998; Tangirala & Ramanujam, 2008a). Yet we hypothesized that these relationships will vary depending on a group's voice climate. In other words, satisfied and identified individuals will not act on their motivation and willingness to help the group to the same extent under all conditions. As Tangirala and Ramanujam (2008a) argued, whereas individual-level factors might motivate employees to speak up, the social context within the group may have an important impact on "whether or not this motivation finds expression as behavior" (p. 44). As they explain, communication in groups is an inherently social process and is thus influenced jointly by individual and contextual factors.

Consistent with this line of argument, we proposed that high identification and satisfaction with the group will be more likely to translate into voice behavior when the group climate supports sharing opinions and ideas or, in other words, when members collectively view this behavior as being safe and worth the effort. Conversely, individuals who are not satisfied or identified with the group have little motivation to offer input that could help the group be more effective. They tend to be disengaged from the group and thus relatively unaffected by social factors such as group voice climate. That is, even if the climate is highly supportive of voice, they are unlikely to engage in this behavior. We thus predicted that the positive effects of identification and satisfaction on voice would be stronger when there is a favorable work group voice climate and weaker when the voice climate is unfavorable.

Hypothesis 2: A work group's voice climate will moderate the relationship between individual-level identification and

voice, such that the relationship will be more strongly positive within groups with favorable voice climates.

Hypothesis 3: A work group's voice climate will moderate the relationship between individual-level satisfaction and voice, such that the relationship will be more strongly positive within groups with favorable voice climates.

Method

Sample and Procedure

We collected survey data from engineers from one division of a large, multinational, chemical company in India. The engineers worked in groups responsible for designing and operating measurement instruments and for managing instrumentation projects from inception to completion. Of the 56 work groups in the division, 42 (75%) agreed to participate.

Employees completed surveys during work hours. No members of management were present, and participants were assured that participation was voluntary and that their responses would remain confidential. The questionnaires included measures of identification and satisfaction, demographic questions, and items used to create measures of voice climate. The surveys were in English, the working language at the company. Respondents took 15–20 min to complete the survey, after which they received a high-quality pen as a token of appreciation.

A total of 253 full-time employees participated (90% response rate from the 42 groups). The average number of respondents per group was six (minimum = 4, maximum = 10). Their average age was 32.23 years ($SD = 4.83$); 60% were male, 93% had at least a bachelor's degree, and 23% had a graduate degree. Average organizational tenure was 4.98 years ($SD = 2.92$), and average work group tenure was 2.15 years ($SD = 0.97$). There were no significant differences in age, gender, education, or work group tenure between respondents and nonrespondents. Respondents did, however, have slightly higher organizational tenure (4.98 vs. 4.00 years), $t(279) = 2.65$; $p < .05$.

We separately collected data from the leaders of each of the 42 work groups. The leaders were engineers who had been with the company for at least five years and who supervised their group yet also participated in the group's activities. The leaders provided ratings of voice behavior for each of their work group members. The average age of the group leaders was 36.67 years ($SD = 4.71$), and 90% were male. Ninety-eight percent had at least a bachelor's degree, and 29% had a graduate degree. Their average tenure with the organization was 7.31 years ($SD = 3.99$), and their average tenure with their work group was 4.00 years ($SD = 2.03$).

Individual-Level Measures

Employee voice. The leader for each work group rated each member's voice behavior, using Van Dyne and LePine's (1998) six-item measure ($\alpha = .94$). This scale contains items such as "This employee develops and makes recommendations concerning issues that affect the team" and "This employee speaks up with ideas for new projects or changes in procedures." Responses were on a 7-point agree/disagree scale.

Identification and satisfaction. We measured individuals' identification with their work group using Mael and Ashforth's (1992) five-item scale ($\alpha = .87$). A sample item is "When someone criticizes my team, it feels like a personal insult." Responses were on a 5-point agree/disagree scale. We measured satisfaction with a three-item scale ($\alpha = .85$) from the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1983). We adapted this scale so that the target was the work group instead of the job. A sample item is "All in all, I am satisfied with my team." Responses were on a 7-point agree/disagree scale.

Group Voice Climate Measure

Data collection. To measure group voice climate, we collected data from individual group members and then aggregated these data to the group level. Given our conceptualization of group voice climate, it was appropriate to use a referent shift consensus model of aggregation (Chan, 1998). We therefore asked individuals to report their perceptions of the group's beliefs about voice safety and efficacy, not their individual beliefs.

We had respondents report both the extent to which members of their group believed that they were capable of effectively voicing (voice efficacy) and the extent to which group members believed that they could voice safely (voice safety). The former was tapped by asking respondents the extent to which "members of your team feel they are capable of effectively doing each of the following" and then listing the six voice behaviors from the LePine and Van Dyne (1998) scale (e.g., "develop and make recommendations concerning issues that affect the team," "speak up with ideas for new projects or changes in procedures"). The latter was tapped by asking respondents the extent to which "members of your team feel it is safe to do each of the following" and then listing the same six voice behaviors. This approach was similar to that used by McAllister, Kamdar, Morrison, and Turban (2007) in their assessment of perceived efficacy of helping and taking charge. However, instructions emphasized that the items pertained to "members of your team in general," not one's own beliefs. Response options ranged from 1 (*definitely not capable*) to 7 (*definitely capable*) for efficacy and from 1 (*definitely not safe*) to 7 (*definitely safe*) for safety. Reliability estimates (α) at the individual level of analysis were .93 for group voice efficacy beliefs and .89 for of group voice safety beliefs.²

² We also collected data to test whether our measures of voice efficacy and safety were empirically distinct from two related constructs: psychological safety and general group efficacy. We collected two sets of data, one at the individual level and one at the group level. We used Edmondson's (1999) six-item measure of psychological safety (e.g., "It is safe to take risks on my team") and three-item measure of group efficacy (e.g., "With focus and effort, my team can do anything we set out to accomplish"). The first sample included 108 part-time MBA students, who were employed and were members of organizational work groups (58.3% male, average age = 28.5 years, average work group tenure = 2.3 years). The second sample included 269 members of 71 MBA study groups (average group size = 5.6; average respondents per group = 3.8). For the latter sample, we aggregated the individual data to create group-level measures (median $r_{wg(j)} = .95$). For both data sets, factor analysis results provided strong support for discriminant validity between our measures and the psychological safety and group efficacy measures. Additional information on these analyses is available from the first author.

Aggregation to the group level. We ran a series of tests before aggregating to the group level. An analysis of variance demonstrated significantly more variance across groups than within: efficacy, $F(41, 213) = 4.71, p < .001$; safety, $F(41, 213) = 3.25, p < .001$. $ICC[1]$ values were .38 for voice efficacy beliefs and .40 for voice safety beliefs. The $ICC[2]$ values for these variables were .79 and .74. These results support the appropriateness of treating group voice efficacy and safety beliefs as group-level constructs. We also computed $r_{wg(j)}$ for each group.³ The median $r_{wg(j)}$ for the 42 groups was .87 for beliefs about group voice efficacy and .89 for beliefs about group voice safety. The magnitude of these $r_{wg(j)}$ statistics provides further support for aggregation. Thus, we created group-level measures of voice efficacy and safety beliefs by averaging the individual-level scores within each group. Consistent with our argument that voice safety and efficacy beliefs reflect a broader voice climate construct, the two measures were highly correlated ($r = .79, p < .001$). We therefore averaged the measures of safety and efficacy to create a composite voice climate measure, which we used in all of our analyses.⁴

Analyses

We tested our hypotheses using hierarchical linear modeling (HLM 6.0; Raudenbush & Bryk, 2001). Given the relatively small number of groups, all models were run with restricted maximum likelihood estimation (Singer & Willett, 2003). When examining Level 2 effects controlling for the Level 1 variables (Hypothesis 1), we grand mean centered the Level 1 variables, and when examining cross-level interactions (Hypotheses 2 and 3), we used group-mean centering (Enders & Tofighi, 2007; Hofmann & Gavin, 1998). We controlled for gender and tenure in the work group, as research has shown these to predict voice (Detert & Burris, 2007; LePine & VanDyne, 1998). We also included group size as a Level 2 control, as there is evidence that voice is inversely related to this variable (LePine & VanDyne, 1998). In addition, we controlled for shared perceptions about group leader fairness (procedural justice climate; Colquitt et al., 2002) to be able to demonstrate that voice climate predicts voice even accounting for another type of group-level belief that might relate to voice. We used Rupp and Cropanzano's (2002) four-item scale ($\alpha = .90$), which we aggregated to the group level (median $r_{wg(j)} = .79$).

Results

Descriptive statistics and intercorrelations are reported in Tables 1 and 2. Although the groups were from the same organizational unit, it is noteworthy that there was considerable between-group variance in their voice climate scores, which ranged from 2.86 to 5.79 (the group means ranged from 2.00 to 6.05 for voice efficacy and from 2.76 to 5.57 for voice safety).

Before testing our hypotheses, we ran a set of confirmatory factor analyses to ensure that there was discriminant validity between the measures (identification, satisfaction, voice, voice climate, procedural justice).⁵ A five-factor model had the best fit, $\chi^2(289) = 709.92$, comparative fit index = .94, Tucker-Lewis index = .94, root mean square error of approximation = .06. It was superior to a model in which the correlation between voice behavior and voice climate was constrained to equal 1, a model in

which the correlation between voice climate and procedural justice was constrained to equal 1, and a model in which the correlation between satisfaction and identification was constrained to equal 1.

To test our hypotheses, we ran a series of models. First, we ran a one-way analysis of variance with random effects (see Table 3). This "null model" confirmed that there was significant variance across work groups with respect to individual voice behavior: $\tau_{00} = .58, \chi^2(41) = 139.08, p < .001$. The $ICC[1]$ indicated that 28% of the variability in voice can be attributed to the work group.

Next, we ran a random coefficients model with satisfaction, identification, and the Level 1 control variables. Both identification ($\gamma = .69, p < .001$) and satisfaction ($\gamma = .15, p < .01$) were positively and significantly related to voice behavior. The results also indicated unexplained between-group variation in voice behavior, $\tau_{00} = .64, \chi^2(41) = 183.16, p < .001$, meaning that it was appropriate to test for Level 2 effects.

To test Hypothesis 1, we added group voice climate to the model, along with the Level 2 control variables. The results indicated that group voice climate ($\gamma = .32, p < .001$) explained significant variance in voice behavior beyond the individual-level effects of satisfaction and identification, which remained significant. Hypothesis 1 was thus supported. It is worth noting that procedural justice climate did not explain unique variance in voice behavior.

Hypotheses 2 and 3 predicted that voice climate would moderate the effects of individual identification and satisfaction. Although tests of such effects typically require between-group variance in the slopes, there is some evidence that it is possible to find interactive effects even in the apparent absence of significant between-group variance (Snijders & Bosker, 1999). Thus, though our prior analyses indicated that there was residual between-group variance in the slopes for identification, $\tau_{01} = .15, \chi^2(41) = 56.76, p < .05$, but not for satisfaction, $\tau_{02} = .01, \chi^2(41) = 46.22, p = .10$, we estimated both hypothesized interactions. We ran an intercepts-and-slopes-as-outcomes model, which allowed group voice climate to predict not just voice behavior but also the slopes for identification and satisfaction. As shown in Table 3, group voice climate exhibited a significant cross-level interaction with identification ($\gamma = .50, p < .001$). Hypothesis 2 was thus supported. There were also significant main effects for voice climate,

³ In computing $r_{wg(j)}$, we used a rectangular null distribution (James, Demaree, & Wolf, 1984). For the two groups with out-of-range values (< 0 or > 1.0), we set $r_{wg(j)}$ to zero before averaging (LeBreton & Senter, 2007; Lindell & Brandt, 2000).

⁴ We also ran all analyses with only the group voice safety measure and separately with only the group voice efficacy measure. The results were virtually the same for these two measures and were highly similar to the results when using the composite. These results provide further evidence that it is appropriate to treat group voice efficacy and safety beliefs as indicators of a single higher order construct rather than as measures of separate constructs. Additional information on these analyses is available from the first author.

⁵ Given the relatively small number of groups, we conducted the confirmatory factor analyses using the individual-level data ($N = 255$). In other words, we used the individual-level perceptions of voice climate and procedural justice, even though we used the group-level measures to test our hypotheses. Although this is an imperfect approach, it seemed preferable given the team-level sample size.

Table 1
Means, Standard Deviations, and Correlations for Individual-Level Variables ($N = 255$)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Gender ^a	0.60	0.49					
2. Tenure with group	2.15	0.97	-.01				
3. Identification	3.22	0.90	-.02	.09	(.87)		
4. Satisfaction	4.35	1.41	-.02	.04	.29**	(.85)	
5. Voice	4.22	1.42	.02	.07	.58**	.39**	(.94)

Note. Cronbach's alpha is in the diagonal for multiple-item measures. *SD* = standard deviation.

^a 0 = female, 1 = male.

** $p < .01$.

satisfaction, and identification. The interaction between voice climate and satisfaction was nonsignificant ($\gamma = .02, p = .75$), indicating that Hypothesis 3 was not supported.

To explore the form of the significant interaction, we examined the relationship between voice and identification at two levels of group voice climate (1 and -1 standard deviation; Aiken & West, 1991). We also computed the simple slopes at each of these levels (Preacher, Curran, & Bauer, 2006). Figure 1 shows, consistent with Hypothesis 2, that identification is positively related to voice regardless of shared beliefs about voice, but this relationship is stronger when the group voice climate is favorable. The simple slopes were 1.21 ($p < .001$) and 0.33 ($p < .05$) at high and low levels of group voice climate. Additionally, the form of the interaction suggests that when identification is low, voice is low regardless of group voice climate but that when identification is high, voice is much higher in groups with favorable voice climates.

As a robustness check, an additional analysis was conducted that included both group voice climate and individual-level perceptions of voice climate (the employee's perception of whether group members feel that voice is safe and effective). This allowed us to test whether group voice climate (i.e., collective beliefs) predicts individual voice behavior above and beyond individuals' perceptions of the group climate. The latter had a significant relationship with voice ($\gamma = .20, p < .01$), yet the effect of group voice climate remained highly significant ($\gamma = .88, p < .001$). That is, even when we controlled for individual perceptions of voice climate, group-level voice climate still related to individual voice behavior.

Discussion

In this study, we found that group voice climate was highly predictive of voice behavior, even after we accounted for the effects of individual attitudes, another important aspect of the social environment (procedural justice climate), and individual

perceptions of the group voice climate. In addition, we found that highly identified group members were especially likely to share ideas and suggestions when they were in a group with shared beliefs that voice was safe and effective. Contrary to our expectations, we did not find an interaction between group voice climate and satisfaction. This was most likely due to the fact that satisfaction did not vary across work groups.

Theoretical and Empirical Contributions

Our results provide strong evidence that voice is driven not just by individual attitudes and perceptions but also by group-level beliefs. Moreover, they demonstrate that individual motivators and contextual facilitators of voice interact; thus, they highlight the importance of considering both in research on voice behavior. To date, there has been only one other cross-level investigation related to voice or silence (Tangirala and Ramanujam, 2008a). Taken together, these two studies expand our understanding of voice and suggest that conceptual models or empirical investigations that focus only on individual-level predictors of voice provide an incomplete picture of this phenomenon. Yet we see our work as extending beyond Tangirala and Ramanujam (2008a) by introducing the group voice climate construct, by using supervisor ratings of voice behavior rather than self-reports, and by hypothesizing and showing a cross-level main effect of shared beliefs. In addition, our study makes an important contribution by demonstrating the uniqueness of voice climate above and beyond procedural justice climate and by highlighting the value of focusing on a more specific (i.e., voice-related) climate for predicting voice behavior. Nonetheless, we urge future researchers to consider more fully the optimal level of voice climate specificity (i.e., when it would be more appropriate to focus on a specific climate and when it would make sense to focus on a more generalized type of climate).

In their recent edited volume, Greenberg and Edwards (2009) commented that Morrison and Milliken's (2000) climate of silence concept is "richly deserving of empirical investigation" (p. 284). Climate of silence, however, refers only to a state in which there are shared beliefs that voice is dangerous and futile (low safety and low efficacy). Our approach was to focus on the full range of variance in the beliefs about voice safety and efficacy and not just situations highly unsupportive of employee voice. Our data indicate that such a broadening is appropriate. Some of the groups in our sample seemed to have a climate of silence, and others had extremely supportive climates for voice.

Our work also provides the first direct empirical support for the idea that collective beliefs about voice develop within organiza-

Table 2
Means, Standard Deviations, and Correlations for Group-Level Variables ($N = 42$)

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. Group size	6.07	1.61			
2. Procedural justice climate	4.33	0.94	-.27	-.10	
3. Voice climate	4.30	0.86	-.16	-.29	.70*

* $p < .05$.

Table 3
Results of Hierarchical Linear Modeling Analyses Predicting Individual Voice

Variable	Model 1	Model 2 ^a	Model 3 ^b	Model 4 ^a
Intercept	4.25***	4.25***	4.26***	4.26***
Gender		0.10	0.10	0.07
Tenure with group		0.04	0.02	-0.05
Identification		0.69***	0.69***	0.76***
Satisfaction		0.15**	0.14**	0.15**
Group size			-0.01	-0.03
Procedural justice climate			0.13	0.08
Group voice climate			0.32***	0.81***
Identification × Voice Climate				0.50***
Satisfaction × Voice Climate				0.02
σ^2	1.45	1.10	1.10	1.03
τ (intercept)	0.58	0.64	0.12	0.08
Proportion within-group variance explained		0.24	0.24	0.29
Proportion between-group variance explained			0.79	0.86

Note. $N = 255$ at Level 1. $N = 42$ at Level 2. Entries are estimates of fixed effects with robust standard errors.

^a Level 1 variables are group mean centered. Level 2 variables are grand mean centered. ^b Both Level 1 and Level 2 variables are grand mean centered.

** $p < .01$. *** $p < .001$.

tional settings. Moreover, it illustrates that these shared beliefs coalesce at the work group level. We found not only high agreement among work group members but also considerable variance across work groups, even though they were presumably receiving the same cues from top management about voice (Detert & Trevino, 2010). This finding is interesting in light of Morrison and Milliken's (2000) suggestion that climates of silence tend to pervade entire organizations. Although this may occur in some situations, in the organization we studied, climates related to speaking up were more localized.

Last but not least, our finding that group-level voice climate explained significant variance in individual voice behavior, even when taking into account the effect of individuals' own perceptions of the voice climate, makes a compelling case for collective-level voice climate as an important emergent construct. These

results provide support for the idea that people are influenced by socially shared beliefs (i.e., unit level climate) independent of their own individual-level beliefs (i.e., psychological climate; Schulte et al., 2006).

Implications for Practice

Our results have important implications for organizational and group leaders who wish to encourage and enable voice behavior. In particular, they suggest that it may not be enough to foster employee satisfaction and identification. Positive attitudes alone are no guarantee that one will speak up with suggestions or concerns (Detert & Burris, 2007); the context must enable and support such behavior as well. Our results demonstrate the important role that group climate can have in fostering open communication. Hence,

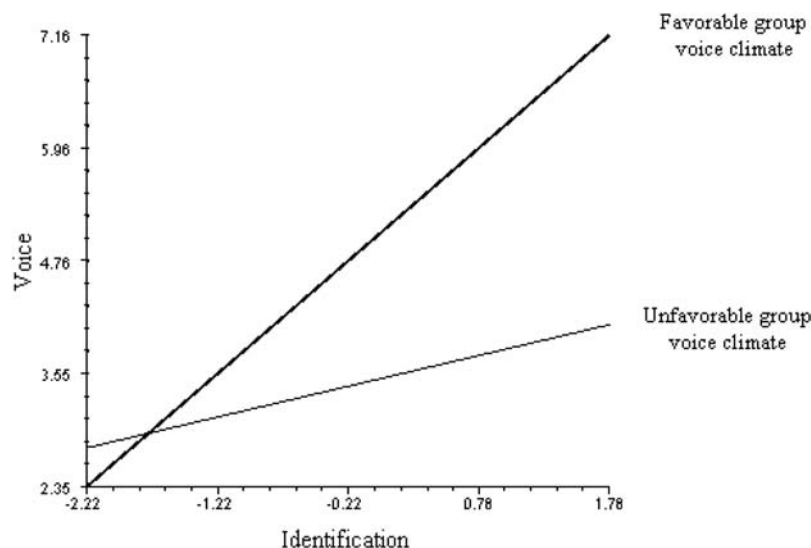


Figure 1. Interactive effects of group voice climate and identification on voice.

group leaders or members who wish to elicit more voice need to ensure that their group's climate is one in which members collectively feel confident that they can voice successfully and that doing so will not be punished or ignored.

Limitations and Future Research Directions

As with any research, this study has some limitations. Because the data are cross-sectional, we cannot rule out the possibility of reverse causality. It is therefore important that longitudinal studies on the effects of group voice climate be conducted in the future. We also had a relatively small number of work groups (cf. Tangirala & Ramanujam, 2008a), and thus we encourage efforts to conduct similar studies using a larger number of groups.

Another potential limitation is that we had a relatively homogeneous sample, which raises valid questions about the generalizability of our findings to other types of employees, organizations, or national contexts. We encourage researchers to conduct similar studies with more diverse samples and/or in other national contexts and to explore the possibility of cultural differences in voice behavior, voice climate, and their interrelationship.

We also encourage work that investigates how voice climate develops. As we have noted, leadership behaviors are likely to play an especially important role. It could also be valuable to investigate the effects of within-group variance in voice-related beliefs (i.e., climate strength; Schneider, Salvaggio, & Subirats, 2002). In addition, although our conceptualization of group voice climate in terms of safety and efficacy beliefs is rooted in prior literature, it is important to acknowledge that it is just one of many possible ways of viewing this construct and that groups may also develop a range of other shared beliefs about voice (e.g., whether it is rewarded, whether it is expected, whether it is something that the group values). Given this fact, it is important to consider broader notions of group voice climate and to compare the predictive validity of broader operationalizations with the one used in this study.

Finally, we encourage research that looks not just at the extent to which people voice but also at how and what they voice. We would expect, for example, that group voice climate could affect the types of issues that people choose to raise and also how they package, frame, and time the message (Dutton, Ashford, O'Neill, & Lawrence, 2001). A more fine-grained analysis of voice behavior could therefore be very fruitful.

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