

ABSTRACT

Title of Dissertation: CAN VOICE HARM TEAM PERFORMANCE?: THE ROLE OF RELATIONSHIP CONFLICT AND TRUST

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Despite research substantiating the idea that when team members voice ideas and suggestions their team can perform better, some scholars have warned that voice can also harm team performance. Yet, our understanding of when, why, and how voice can undermine team functioning is still limited. Attempting to address these research gaps, I integrate and build on threat rigidity theory and regulatory focus theory to propose that the reason why voice has the potential to undermine team performance is because it can trigger relationship conflict – and that prohibitive voice, as compared to promotive voice, has a greater potential to trigger relationship conflict, especially when team trust is low. I test this theory using a time-lagged, laboratory study with 87 teams, as well as a time-lagged, multi-source field study with 49 teams of U.S. Air Force officers. Across studies, I largely do not find support for my hypotheses. For example, opposite of my predictions, it appears that both promotive and prohibitive

voice have either a non-significant or negative effect on relationship conflict; however, I find partial support for the hypothesis that trust moderates the relationship between prohibitive voice and relationship conflict. Despite these mixed findings, this research contributes to the voice, teams, relationship conflict, and trust literatures by empirically investigating whether voice can undermine team performance.

CAN VOICE HARM TEAM PERFORMANCE?: THE ROLE OF RELATIONSHIP
CONFLICT AND TRUST

by

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Chapter 1: Introduction

More and more, work teams are becoming a critical component of organizational life (Kozlowski & Ilgen, 2006; Mathieu, Maynard, Rapp, & Gilson, 2008). There are a number of reasons behind this rise in the prevalence of work teams – teams are better equipped to handle complex task work; compared to an individual employee, teams have greater informational resources; and teams can leverage various members’ knowledge to enhance both services and products (Gardner, Gino, & Staats, 2012). However, for teams to operate effectively, individual members need to engage in proactive work behaviors (Kozlowski & Bell, 2013). This entails members “taking control of, and bringing about change within, the internal organizational environment” of their team (Parker & Collins, 2010, p. 637). As Grant and Ashford (2008) noted, “In an increasingly global and ambiguous world of work, proactivity is perhaps more important than ever before” (p. 5). Teams depend on members to communicate opinions about work-related issues, make improvement recommendations, and propose new projects or changes in procedures that will benefit the organization (Grant & Ashford, 2008; Kozlowski & Bell, 2013; Parker & Collins, 2010). Thus, the success (or failure) of a team is driven by the proactive actions and behaviors of team members, working together interdependently.

One form of proactive behavior that is critical for team functioning is voice, defined as an individual’s expression of work-related opinions, ideas, or concerns that are intended to improve the workplace (Van Dyne & LePine, 1998). I focus on

aggregated team voice, which regards the extent that team members as a whole engage in the expression of constructive opinions, concerns, or ideas about work issues (Li, Liao, Tangirala, & Firth, 2017; Mackenzie, Podsakoff, & Podsakoff, 2011). Team voice regards the extent to which team members contribute their “work-related opinions, concerns, or ideas” and it reflects a collective upward (i.e. directed at the team as a whole) and lateral (i.e. directed at individual members) form of communication that is intended to constructively influence team outcomes. I focus on team voice because my objective is to explore whether or not proactive team members’ behaviors can harm team functioning, an idea that has been suggested in the literature but has not been adequately explored.

Early qualitative work exploring team-level outcomes of voice linked it to important team processes and outcomes, such as the detection of opportunities and problems in task routines (Edmondson, Bohmer, & Pisano, 2001), the prevention of avoidable mistakes (Edmondson, 2003), and continuous process improvements (Nemeth, Connell, Rogers, & Brown, 2001). Recent quantitative studies have also shown that teams with more collective voice have better team performance (Detert, Burris, Harrison, & Martin 2013; Frazier & Bowler, 2015; Lam & Mayer, 2014; Li et al., 2017; Mackenzie et al., 2011). However, as Morrison (2011) noted in her review of the voice literature, “Implicit in the definition of voice is the idea that this behavior often entails risk, since offering even a seemingly constructive suggestion implies a challenge to the status quo” (p. 377) and “I believe it is too simplistic to conclude that voice will always be good for the work unit” (p. 401). Additionally, the voice literature has suggested that speaking up can cause team members to experience

frustration, anxiety, and even anger (Campbell, 2000; Frese & Fay, 2001; Grant & Ashford, 2008; LePine & Van Dyne, 1998; Morrison, 2011; Morrison & Milliken, 2000); however, this issue has not received adequate theoretical or empirical exploration. Thus, as outlined below, important gaps and questions remain in the literature regarding both when and why voice influences team performance, since it appears that speaking up has the potential to result in negative outcomes that could harm team performance.

First, a close examination of the voice literature shows that scholars have alluded to the notion that voice can potentially harm team performance (Campbell, 2000; Frese & Fay, 2001; Grant & Ashford, 2008; LePine & Van Dyne, 1998; Morrison, 2011; 2014; Morrison & Milliken, 2000), yet the reasons *how* have not been clearly outlined or empirically examined. There has been little direct empirical examination of the potential for voice to cause relationship conflict and important conceptual and empirical ambiguities remain regarding the relationship between team voice and team outcomes. Moreover, the current empirical and focused theoretical work on the team outcomes of voice has largely emphasized the benefits of speaking up, with little attention to the costs. As Morrison (2011) noted, we know more about the positive team-level outcomes of voice than the negative ones and there is a lack of sufficient theoretical development and empirical examination of this issue.

To address the above gap, I explore how the link between team voice and team performance is mediated by team relationship conflict. In doing so, I make several contributions to literatures on voice and relationship conflict. First, building on and integrating threat rigidity theory (Staw, Sandelands, & Dutton, 1981) and

regulatory focus theory (Higgins, 1997; 1998), I develop a new theoretical framework for understanding the potential costs of voice. Thus, I provide a more complete theoretical account for how voice can harm team functioning and team performance. This is important since the ideas of costs associated with voice are usually looked at from the perspective of risk to the voicer, as opposed to risks to the team (e.g., Burriss, 2012; Cortina & Magley, 2003; Deter & Burriss, 2007; Howell, Harrison, Burriss, & Detert, 2015; Seibert, Kraimer, & Crant, 2001), and an important outstanding question is whether or not these risks manifest at both levels. Second, I expand the criterion domain of voice outcomes and illustrate how team voice can harm team performance, while positioning relationship conflict as an underlying mechanism. Third, the conflict literature often only considers “conflict-provoking situations” (e.g. procedural injustice, undermining, etc.) as antecedents to relationship conflict (see Korsgaard, Jeong, Mahony, & Pitariu, 2008). I advance the field by integrating the conflict and voice literatures to show how team voice, as a set of beneficial proactive behaviors, can act as a “conflict-provoking situation” and expanding the nomological net of both research streams to illustrate an overlooked behavior that can result in conflict. These contributions are especially important considering that there are conflicting arguments and findings in the literature regarding the causal direction and whether voice impacts conflict or vice-a-versa – i.e. MacKenzie et al. (2011) argued that voice can cause (albeit in a curvilinear fashion) relationship conflict and found initial support for this hypothesis, De Dreu and Van Vianen (2001) argued that relationship conflict can reduce voice but found only non-significant results, and Farh and Chen (2014) argued that relationship conflict could reduce voice and found

support for this hypothesis. Thus, I contribute to this research by providing conceptual clarity and empirical findings to further address the link between voice and relationship conflict.

Second, though research on the outcomes of team voice have led to useful developments, this work often treats voice as a unitary concept and has not distinguished it based on its content (for an exception at the team-level, see Li et al., 2017). As Chamberlin, Newton, and LePine (2016) pointed out in their meta-analysis, (at the time) only the effects of constructive voice on team outcomes had been explored. This is unfortunate since the content of voice can influence the effect it has on team outcomes. As Morrison (2014) suggested, “the impact of voice on unit performance is likely to depend on such things as the nature of the information being voiced” (p. 189) – i.e. whether or not voice highlights opportunities for the team or points out problems and mistakes. Though a majority of voice research has taken an undifferentiated view of voice, recent work has emerged suggesting that voice can be distinguished based on its content (cf., Liang, Farh, & Farh, 2012; Maynes & Podsakoff, 2014; Morrison, 2011).

To address this gap, I identify prohibitive voice as a likely antecedent of relationship conflict. The voice literature has distinguished between two key forms of voice: promotive and prohibitive (Liang et al., 2012). Promotive voice is defined as, “an employees’ expression of new ideas or suggestions for improving the overall functioning of their work unit or organization” (p. 74); this form of voice focuses on suggesting ways in which teams can perform better in the future. Prohibitive voice, by contrast, is defined as, “an employees’ expressions of concern about work

practices, incidents, or employee behavior that are harmful to their organization” (p. 75); this form of voice focuses on pointing out past or potential mistakes, errors, and problems to avoid the deterioration of the status quo. Though prior studies have examined promotive and prohibitive voice at the individual level and have highlighted their antecedents as well as different individual outcomes based on the type of voice one engages in (e.g., job performance ratings; Chamberlin et al., 2016), research is lacking that simultaneously examines the impact of team promotive and prohibitive voice on the team functioning (for an exception, see Li et al., 2017). This is important since I suggest that prohibitive voice is more likely to result in relationship conflict than promotive voice because it is more likely to trigger perceptions of threat. Additionally, simultaneously exploring the impact of both forms of voice is important since relationship conflict may be triggered by different forms of voice to different extents and I highlight the usefulness of specifying the content of voice when examining its influence on team functioning.

Third, to understand how voice can harm team performance, via relationship conflict, it is important to also delineate the conditions under which it is more (less) likely to do so. This issue is important since a core assumption regarding what is required for voice to have its effect on the team is that it first needs to be heard but then, critically, the team needs to be able to act on it. Prior work has begun to address the first assumption by exploring when voice is more likely to be heard. For example, the voicers’ status (Howell et al., 2015), expertise (Whiting, Maynes, Podsakoff, & Podsakoff, 2012), and centrality in the team (Baker, Chen, Firth, & Yan, 2016; Li, Zhao, Walter, & Zhang, 2014) all play an important moderating role regarding when

voice is more versus less likely to be heard. However, once voice is “heard”, it still needs to be acted on and conceptual clarity is missing in the literature regarding how attributes of the team may affect when the team is more versus less likely to be able handle acting on and incorporating the suggestions inherent in voice.

To address this gap, I look at how team trust acts as an important boundary condition regarding the relationship between both team promotive and prohibitive voice and relationship conflict. In embracing the distinction between promotive and prohibitive voice, I delineate an important perspective on how team trust, as a critical attribute of the team, influences the relationship between these forms of voice and team performance (via relationship conflict). By uncovering these effects, I also answer calls for research that delineates differential consequences of promotive and prohibitive forms of voice for team effectiveness (e.g., Liang et al., 2012; Morrison, 2014). Hence, behaviors such as promotive voice, aimed at improving team processes, may only have a constructive impact on team functioning if team trust is high. Relatedly, I show how team trust is especially important for reducing the potential negative effects of prohibitive voice. By bringing these perspectives together, I add a conceptual structure to the discussion on how the consequences of promotive and prohibitive voice can vary as a function of a specific team attribute (i.e. team trust). Figure 1 depicts my theoretical model.

Chapter 2: Literature Review

Team Voice

Voice is defined as informal and discretionary communication by an employee of ideas, suggestions, concerns, information about problems, or opinions about work-related issues, with the intent to bring about improvement or change (Morrison, 2011; Tangirala & Ramanujam, 2008; Van Dyne & LePine, 1998); it is a proactive (Grant & Ashford, 2008), extrarole behavior that, although constructive in intent, challenges and seeks to alter the status quo (Van Dyne, Ang, Botero, 2003) and is thus potentially threatening and disruptive. Morrison (2011) proposed the following consolidated definition of voice: “Discretionary communication of ideas, suggestions, concerns, or opinions about work-related issues with the intent to improve organizational or unit functioning” (p. 375), which is characterized by a constructive challenge to the status quo. Recently, researchers have proposed expanding voice to include statements supportive of the status quo (Burriss, 2012; Maynes & Podsakoff, 2014), non-discretionary comments (Fast, Burriss, & Bartel, 2014), and suggestions with destructive intent (Maynes & Podsakoff, 2014).

Different dimensions of voice have also been explored. As the definition highlights, the content of the message can vary from ideas for how to do things differently to information about potentially serious problems. The former has been referred to as promotive (Liang et al., 2012) or suggestion-focused (Morrison, 2011) voice; the latter has been referred to as prohibitive (Liang et al., 2012) or problem-

focused (Morrison, 2011) voice. Ultimately, voice has long been theorized and shown to be important for team functioning, but it is also a challenging behavior (Van Dyne, Cummings, & McLean Parks, 1995) and, thus, it has the potential to harm relationships and undermine team effectiveness. It is therefore important to understand the conditions when voice is more likely to lead to improved team functioning versus when it is more likely to undermine team effectiveness – and, as I argue, one of those conditions is the type of voice an individual engages in.

Though voice is an individual behavior that employees personally engage in, it also has clear implications as a collective behavior that multiple members of a team can perform. Thus, voice can emerge as a team-level phenomenon (cf., Detert et al., 2013; Frazier & Bowler, 2015; Lam & Mayer, 2014; Li et al., 2017; MacKenzie et al., 2011), even when distinguishing between promotive and prohibitive voice (Li et al., 2017). I build on this work by further showing that these two forms of voice have meaning as a team-level construct and I extend this work by showing how both forms of voice can potentially harm an important interpersonal team emergent state (i.e. relationship conflict).

In terms of how individual voice emerges as a team-level construct, in team contexts, voice reflects an upward (i.e. directed at the team and/or a leader) as well as a lateral (i.e. directed at certain individual teammates) change-oriented behavior enacted by individual members (Morrison, 2011, 2014). Thus, voice emerges at the team level when it is recognized by other members, as well as when members adopt voice as a collective behavioral norm. As Li et al. (2017) noted, “Team voice emerges when there is agreement in the team that members, in general, contribute their work-

related opinions, concerns or ideas to the team. That is, team voice refers to communication that members initiate toward one another within the team” (p. 1259).

Content of promotive voice. A key distinguishing factor between types of voice is its content and what is conveyed. The content of *promotive voice* centers on expressing opportunities to enhance organizational functioning by doing new things, in new ways, in the future. Such voice is “promotive” in the sense that it is focused on a future ideal state, or what could be. By highlighting the possibility that the team can be better and specifying the means for progress to happen, promotive voice encourages exploring new opportunities. In this way, it is “variance creating” (Sitkin, Sutcliffe, & Schroede, 1994), in that it attempts to move the team from pursuing existing strategies to new opportunities, involving different goals.

For example, employees engage in promotive voice when they offer novel ideas to achieve goals and perform work tasks (Zhou & George, 2001) and when they express ideas and identify means by which organizational functioning could be improved (Dutton & Ashford, 1993). Central to the notion of promotive voice is the idea that changes to the current work environment are expressed with a future-oriented outlook (Liang et al., 2012) or are focused on long-term improvements and innovation (Qin, DiRenzo, Xu, & Duan, 2014). Consequently, promotive messages are often framed as expressions of “what could be” and are embedded with good intentions that should be interpreted as positive (Liang et al., 2012). In short, promotive voice points out ways that a team can function more effectively and identifies new opportunities.

That said, voice still proposes a change to the status quo, which could be interpreted as threatening; it may also cause inconvenient, short-term changes for members, such as increased workload while pursuing new goals, or it could contain suggestions that encourage an individual member to sacrifice their own individual goals for the betterment of the team. However, since this form of speaking up is accompanied with solutions and suggestions for improvement, employees who engage in promotive voice are likely to be seen as making a positive contribution to the their team; and the suggestions made are expected to bring about improvements that should ultimately benefit the team, and its individual members, in the long term.

Content of prohibitive voice. Prohibitive voice involves employee expressions intended to benefit the organization by preventing negative events. The content of prohibitive voice is problem-focused in nature (Morrison, 2011) because it points out harmful, failing, or wrongful work practices or events that currently exist (Liang et al., 2012). Its focus is on factors that may harm or put the team in jeopardy. By highlighting the possibility that there are threats and hazards in the task environment and specifying particular issues that the team should be vigilant about, it drives efficient use of resources and encourages sticking to agreed-upon norms.

For example, employees use prohibitive voice as a means of generating awareness of dissatisfying aspects of work (Farrell, 1983; Hirschman, 1970; Withey & Cooper, 1989), calling attention to problematic practices (Miceli & Near, 1985), or objecting to the status quo based on a violation of standards of justice (Gorden, 1988; Graham, 1986; Van Dyne et al., 1995). Another distinguishing factor is that prohibitive voice has both a past and future orientation, since it calls attention to

factors that have harmed the status quo (e.g., existing problems with coordination) or factors that can potentially harm the team in the future (e.g., practices that could lead to process losses). By directing attention to past- or future-oriented factors that are harmful, employees frame their prohibitive voice messages around critical situations that need attention because of the immediacy of harm (Qin et al., 2014). In this way, prohibitive voice is a “variance reducing” control mechanism (Sitkin et al., 1994), in that it attempts to decrease variance between where the team is at relative to current (adopted) goals or strategies.

Prohibitive voice serves an important function for team health, since alarming messages place previously undetected problems on the collective agenda to be resolved or prevent problematic initiatives from taking place. Prohibitive voice calls for stopping harm, thereby preventing the negative effects of process losses in a timely manner. Though it points out factors that are or could be harmful for the team, it does not necessarily provide solutions for resolving the concerns voiced. Although this form of voice may be well intended, by attempting to stop damaging or adverse behaviors or activities, prohibitive voice necessarily implicates the failure of those responsible, and thus can evoke negative emotions that lead to conflict or defensiveness (Liang et al., 2012; Van Dyne et al., 1995), upsetting the interpersonal harmony in a team.

Outcomes of voice. The majority of voice literature has focused on the antecedents to voice as opposed to the outcomes. As a result, Morrison (2011) made an explicit call for “a deeper and broader understanding of [voice] outcomes” (p. 401). Though work is beginning to emerge in this area (e.g., Detert et al., 2014;

Frazier & Bowler, 2015; Lam & Mayer, 2014; Li et al., 2014; Li et al., 2017; MacKenzie et al., 2011; McClean, Burris, & Detert, 2013), there is still limited empirical research looking at the effects of team voice on team outcomes – and especially the mediating mechanisms and boundary conditions of these effects (for an exception, see Li et al., 2017). Below, I review key findings in this area thus far.

Frazier and Bowler (2015) explored how voice climate and team voice behaviors mediate the relationship between supervisor undermining and team performance. They surveyed employees at a building facilities and maintenance business in the U.S. and found that team voice was positively related to team performance ($r = .60, p < .05$), suggesting that the more voice behaviors the team engages in the more effective they become. Despite these findings, the authors note that voice also has the potential to upset personal relationships and may have “conflicting outcomes (i.e., improved functioning vs. upsetting others)” (p. 842).

Walumbwa, Morrison, and Christensen (2012) explored how team voice mediated the relationship between ethical leadership and team performance. Using a time-lagged study with nurses, they found that team voice was positively related to team performance ($r = .47, p < .05$). Lam and Mayer (2014) looked at how team voice related to team service performance; using a time-lagged study with custodial and food service employees at U.S. hospitals, they found a positive relationship between team voice and team performance ($r = .33, p < .05$).

McClean et al. (2013) explored the relationship between employee voice and turnover. Using a time-lagged study with fast food workers in the U.S., they found that team voice was positively (negatively) related to turnover when managers

signaled a low (high) ability and willingness to engage in change. These results suggest that the benefit or harm of different levels of managerial responsiveness to employee voice extend to many employees in a team and that collective voice has an impact not just on the voicer but those around him/her as well.

Using network methods to examine voice flows to the leader, Detert et al. (2013) found a positive association between voice targeted at a team leader and team effectiveness ($r = .24, p < .05$). This was true whether voice came from subordinates within the team or from employees in other teams. Though voice that was directed at a leader had a positive impact on team performance, voice directed at co-workers undermined performance ($r = -.24, p < .05$).

Finally, Li et al. (2017) explored the impact of promotive and prohibitive team voice on team outcomes, while examining mediating and moderating mechanisms. Using a time-lagged study with employees at a chemical processing firm in China, they found that promotive and prohibitive voice were related to distinct team-level performance outcomes – and for different reasons. Building on regulatory focus theory (Higgins, 1997), they theorized that the reason for these different effects was that the two different types of voice either motivate a team to achieve aspirational goals (i.e., increase promotive effort) or prevent harmful incidents (i.e. increase prevention effort). They found support for their theory and demonstrated that promotive voice was related to productivity gains and that team innovation acted as the mediating mechanisms for this relationship; additionally, team prohibitive voice was related to team safety gains and the explanatory mechanism for this relationship was team monitoring. Moreover, they found that team prohibitive voice had a

stronger effect on safety performance gains, mediated through team monitoring, when prior team safety performance was lower; this suggests that teams are more likely to act on prohibitive voice when the teams prior safety performance is poor.

Taken together, this prior work suggests that voice can have conflicting effects on team performance depending on the type of voice that team members engage in and who those voice behaviors are directed at. These findings are important because, as it relates to my dissertation, I explicitly look at two forms of voice (promotive voice and prohibitive voice) and also look at both lateral and upward forms of voice.

Voice and relationship conflict. Given the focus of my dissertation, it is important to highlight three prior studies that each deal with voice and relationship conflict. However, as noted above, each has conflicting arguments and findings and one of the contributions of my dissertation is attempting to resolve these issues.

First, De Dreu and Van Vianen (2001) theorized that behaviors like voice are reflective of positive team functioning and thus might be harmed by relationship conflict, given the theory of cooperation and competition (Deutsch, 1973). They sampled members of 27 teams from various industries, in an unspecified country, and team members were given a survey at one time and supervisors were given a survey several weeks later. They found a non-significant correlation ($r = -.01, ns$) between undifferentiated team voice and relationship conflict, suggesting that the constructs are not related. Overall, this study is a starting point for exploring the links between voice and relationship conflict; however, I add to this study by providing a more detailed account of why voice might trigger relationship conflict (as opposed to voice

being an outcome of relationship conflict) and, as outlined in the methods sections, I have designed a more rigorous test of this question with a larger sample size.

Second, Farh and Chen (2014) argued that team relationship conflict could reduce individual undifferentiated voice. As opposed to De Dreu and Van Vianen (2001), Farh and Chen (2014) found support for these arguments across two studies (a field study and a vignette experimental study). A limitation of the field study is that both relationship conflict and voice were collected at the same time and thus it is not possible to parse out the causal direction of effects. Additionally, though they conducted a vignette study, with an experimental design, they manipulated abusive supervision, versus relationship conflict or voice. Given that prior studies have shown the harmful effects of abusive supervision on individual and team outcomes (Mackey, Frieder, Brees, & Martinko, 2017), it is unsurprising that this manipulation had such a strong effect on outcomes like team relationship conflict and individual voice. Thus, even though Farh and Chen (2014) found that higher levels of team relationship conflict led to lower levels of undifferentiated individual voice, the possibility that voice could trigger relationship conflict cannot be ruled out. I address these issues by collecting both team voice and team relationship conflict measures at two separate time points and testing these “competing effects.”

Third, unlike the above studies, MacKenzie et al. (2011) argued that undifferentiated voice could cause relationship conflict (versus being an outcome of relationship conflict) and thus potentially harm team performance. Using a time-lagged study with fast food workers in Australia, they found a curvilinear effect of voice on team performance. The implications of these findings are that too much

voice in a team appears to undermine performance, similar to the too-much-of-a-good-thing effect. These authors suggested, though did empirically test, that voice could lead to relationship conflict, noting that “it is possible that [voice] has dysfunctional effects on organizational effectiveness measures because challenging the status quo may evoke negative emotional reactions from coworkers (e.g., frustration, anxiety, fear, dissatisfaction, etc.), increase uncertainty in the work group, or cause infighting and bickering among group members” (p. 564). I directly build on this work by (1) explicitly theorizing and testing relationship conflict as an outcome of voice and (2) empirically exploring alternative relationships (such the curvilinear effect of voice on relationship conflict) linking voice to relationship conflict.

Boundary conditions of voice effects. When considering the impact of voice on team functioning, it is important to take into consideration boundary conditions that may determine the direction of voice on team outcomes. Morrison (2014) began to touch on a those factors; for example, she suggested that what one voices, how one engages in voice, who engages in voice, and to whom one targets may all moderate the effects of voice.

In terms of how attributes of the voicer impact individual- and team-level outcomes, Li et al. (2015) found that an individual “extra miler” had a disproportionate impact on team outcomes, but only when that individual was in a central position; similarly, Baker et al. (2016) found that individuals who are the most central in their team are able to improve team performance by increasing team coordination, but less central members had a non-significant impact on team functioning or performance. Howell et al. (2015) found that a voicers’ status

moderated the relationship between voice expression and voice recognition, such that a voicer was more likely to be “heard” when they had higher status. Experimental work by Whiting et al. (2012) found that when a single incident of voice occurs, characteristics of the voice source, message, and situation all play a role in performance evaluations of the sender. In particular, Whiting et al. showed that both source expertise and trustworthiness positively relate to performance evaluations after a voice event. Additionally, Sherf, Sinha, Tangirala, and Awasty, (2018) found that voice could undermine team functioning when it was primarily engaged in (i.e. high centralization) by members who were more socially dominant and less reflective. Regarding the target of voice, Detert et al. (2013) found that subordinate voice directed at a leader had a positive impact on team performance, but subordinate voice directed at ones’ fellow co-workers undermined team performance.

In terms of the type of voice that an individual engages in, Burris (2012) found that managers view employees who engage in more challenging forms of voice as worse performers and endorse their ideas less than those who engage in supportive voice. Maynes and Podsakoff (2014) found that supportive and constructive voice was positively related to perceived organizational concern and perceived positive impact on the part of the voicer, but defensive voice was negatively related to perceived organizational concern. Lam (2013) found that employees are less direct and more polite when they raise an issue that is perceived as potentially threatening to their manager and that voice directness was more strongly associated with idea endorsement, whereas voice politeness was more strongly associated with subordinate liking. In their meta-analysis, Chamberlin et al. (2016) found that promotive voice

was positively associated with performance appraisals for the voicer, whereas prohibitive voice was negatively associated with performance appraisals.

Grant (2013) found that emotional regulation of the voicer, and more specifically when they timed engaging in voice depending on how their supervisor was behaving, moderated the relationship between individual voice and performance evaluations – such that the relationship was stronger when the employee was high in emotional regulation. Burriss et al. (2013) found that negative employee evaluations arose as a result of employees overestimating their voice relative to their managers' perspective and positive performance evaluations resulted from employees underestimate their upward voice. These results suggest that for voice to have a positive effect for the voicer, employees need to underestimate their contribution (compared to their supervisors assessment of contribution).

In summary, although some studies have suggested that voice may trigger conflict, this has only been suggested and not empirically studied; thus, the current body of research on the outcomes of voice suggests that the more a team voices, the better they will perform. Moreover, the work that is emerging on the boundary conditions of voice effects has primarily focused on how the effects of team voice depend on attributes of the voicer (Baker et al., 2016; Howell et al., 2015; Li et al., 2015; Sherf et al., 2018), the content of voice (Burriss, 2012; Chamberlin et al., 2016; Lam, 2013), and the target of voice (Detert et al., 2013). However, missing from this work is an exploration of how attributes of the team itself may play an important moderating role that reduces (or enhances) the potentially disruptive aspect of voice on team functioning.

Team Conflict

Relationship conflict is defined as an emergent team state [i.e., “qualities of a team that represent member attitudes, values, cognitions, and motivations;” Marks, Mathieu, & Zaccaro, 2001, p. 357] reflecting an awareness of interpersonal incompatibilities, and includes affective components such as feeling tension and friction (Jehn, 1995). It regards disagreements among group members about interpersonal issues, such as personality differences or differences in norms and values. Relationship conflict is also associated with a dislike among group members and “feelings such as annoyance, frustration, and irritation” (Jehn & Mannix, 2001, p. 238).

Another key form of conflict is team task conflict, which is defined as an emergent state entailing disagreements among team members about the content and outcomes of the tasks being performed (Jehn, 1995). Task conflicts include arguments about the job at hand and differing ideas or viewpoints about doing them (Jehn, 1995). Task conflict may coincide with animated discussions and personal excitement but it is void of the intense interpersonal negative emotions that are associated with relationship conflict (Jehn & Mannix, 2001).

When considering how team voice may trigger relationship conflict, there are several reasons why it is important to consider the link between task and relationship conflict. First, task and relationship conflict have often been found to co-occur (see meta-analyses by De Dreu & Weingart, 2003; De Wit, Greer, & Jehn, 2012; O'Neill, Allen, & Hastings, 2013), such that when task conflict is high so is relationship conflict. Second, though both promotive and prohibitive voice, as a collection of

individual behaviors, are distinct constructs from task conflict, a shared perception in the team, there are similarities in terms of how the constructs are conceptualized.

For example, task conflict is an awareness of differences in views and opinions pertaining to a team task. When looking at the definition of voice (e.g., an individual's expression of work-related opinions, ideas, or concerns that are intended to improve the workplace; Van Dyne & LePine, 1998), there are clear similarities. For example, when someone engages in voice, they are bringing awareness to and shedding light on a change to the status quo that they feel is important for the team – and engaging in a behavior that could easily result in an “awareness of differences in viewpoints and opinions pertaining to a group task.” In this way, team voice could be construed as task conflict. However, simply because someone engages in voice does not mean differences of opinion or disagreements arise; for example, a team member could point out a way to do something better, or identify a mistake the team had made, and everyone agrees that the new process should be undertaken or the mistake should be fixed. Additionally, simply because there is task conflict, this does not mean that team members are engaging in voice behaviors; for example, there could be disagreements about how to go about accomplishing a team task, yet no one has spoken up with ways to do it better. Another reason team voice and task conflict are conceptually distinct is because voice represents a set of collective behaviors by team members whereas task conflict could (or could not be) the outcome of those behaviors – and outcomes of behaviors, and the behaviors themselves, should never be conflated (Organ, 1997). Put differently, voice may act as an input that can trigger a process of considering different opinions, which would reflect task conflict, but the

“input” (of voice) is distinct from a “process” (of task conflict) that may (or may not) ensue.

Though voice and task conflict are distinct, given the similarities, understanding why task conflict can result in relationship conflict is helpful for understanding how voice may result in the same outcome – and the boundary conditions that can reduce this effect. Studies have shown that teams find it hard to engage in high levels of task conflict, without also experiencing relationship conflict. For example, meta-analyses have shown a positive relationship between both forms of conflict (De Dreu & Weingart, 2003; De Wit et al., 2012; O'Neill et al., 2013) and prior work has shown that task conflict can trigger relationship conflict because team members become dissatisfied when they interpret challenges of their viewpoints as a negative assessment of their own abilities (Choi & Cho, 2011; Swann, Polzer, Seyle, & Ko, 2004). As it relates to team performance, several meta-analyses have also shown that relationship conflict is detrimental to team performance (De Dreu & Weingart, 2003; De Wit et al., 2012; O'Neill et al., 2013) but that the relationship between task conflict and team performance is better where the association between task and relationship conflict was weaker (de Wit et al., 2012).

Moderators of the task and relationship conflict link. Several studies have sought to explore whether different types of conflict co-occur and what attenuates the relationship between these forms of conflict (Mooney, Holahan, & Amason, 2007; Pelled, Eisenhardt, & Xin, 1999; Shaw et al., 2011). The majority of this research focuses on the association between task and relationship conflict. Researchers who examined the linkage between task and relationship conflict frequently argue that task

conflict has the potential to trigger relationship conflict, and this is more (less) likely to occur under certain contexts (Jehn & Bendersky, 2003; Kotlyar & Karakowsky, 2006). For example, prior meta-analytical work has shown that task conflict is more likely to trigger relationship conflict in high stakes environments when teams are working on more uncertain and complex tasks than for the simple, routine (production) tasks (De Dreu & Weingart, 2003). Overall though, of the research in this area, team trust has been shown to be one of the strongest moderators of the task and relationship conflict link.

Team trust denotes a shared generalized perceptions of positive expectations that team members have of each other. Like most team-level conceptualizations of trust (e.g., Langfred, 2004; Simons & Peterson, 2000), my notion of team trust refers to generalized expectations for all team members. Perceptions of trust reside at the individual level, which regards a willingness to be vulnerable to the actions of others (Mayer, Davis, & Schoorman, 1995) and an intention to accept vulnerability to a trustee based on positive expectations of his or her actions (Colquitt, LePine, Zapata, & Wild, 2011). However, team trust comes from the shared quality of these individual-level perceptions, which are believed to emerge from team membership and social categorization processes (Williams, 2001), from team members' collective "sense-making" about their shared experiences (Shamir & Lapidot, 2003), and from contextual factors that reassure team members and constrain their interactions (McKnight, Cummings, & Chervany, 1998).

Within the conflict literature, the issue of trust building has garnered significant attention as a moderator of relationship conflict due to its effect of

building and maintaining cohesion between team members (De Dreu & Weingart, 2003; Jehn & Mannix, 2001; Lau & Cobb, 2010). In a seminal article examining the moderating effect of trust on task and relationship conflict, Simons and Peterson (2000) theorized that trust inhibits the misinterpretation of task conflict as relationship conflict – and they found empirical support for this argument. This finding is in line with work by Peterson and Behfar (2003), who also hypothesized and found that task conflict was less likely to trigger relationship conflict when there are high levels of trust among team members, which they theorized occurred through a process of biased information processing. With the purpose of clarifying the link between task and relationship conflict, Choi and Cho (2011) tested competing models to show how the two types of conflict are related; consistent with the previous studies (e.g., Peterson & Behfar, 2003; Simons & Peterson, 2000), they found that task conflict increased relationship conflict when team trust was low.

Finally, team trust has been shown to be a predictor of team conflict. For instance, Curşeu and Schreijer (2010) theorized that a lack of trust in teams may lead members to feel attacked while exchanging ideas and showed that the development of trust in the initial phases of team interactions was negatively related to task and relationship conflict in later stages of team development. Likewise, Han and Harms (2010) theorized that when team members lack trust, they are more likely to interpret ambiguous behaviors in others negatively and, subsequently, infer that relationship conflict is a possible reason for disagreements about how to do a task; empirically, they found a negative effect of trust on both task and relationship conflict.

In summary, the current body of research suggests that emergent states like task conflict (which is similar to team voice) can trigger outcomes like relationship conflict. However, there is a solid body of theoretical and empirical work showing that the strength of this relationship can be reduced in the presence of team trust, suggesting that team trust may also moderate the link between team voice and relationship conflict.

Chapter 3: Theory and Hypotheses

To develop a better understanding of the link between team voice and team performance, via relationship conflict, one needs to first understand the underlying psychological reaction of teams to a behavior like speaking up. Although there is no one theory that focuses on reactions to voice, I suggest that threat rigidity theory and regulatory focus theory can be utilized to develop a theoretical framework to better understand the potential negative consequences of team voice. I briefly review these theories below, highlighting the aspects relevant to team voice.

Threat Rigidity Theory

As outlined above, voice scholars have alluded to (though, yet to demonstrate) the potential for team voice to be perceived as threatening. For example, Burris (2012) points out that challenging (versus supportive) types of voice are often perceived as more threatening, because they implicitly or explicitly criticize a co-worker or the sets of routines that are a co-workers responsibility. Also, statements that team members must take a specific action (or would be a fool not to) have been found to increase reactance and negative emotions, because they are perceived as threatening (Brehm & Brehm, 1981; Dillard & Shen, 2005). Morrison and Milliken (2000) noted that targets of voice might not always welcome this behavior because they “feel a strong need to avoid embarrassment, threat, and feelings of vulnerability or incompetence. Hence, they will tend to avoid any information that might suggest weakness or that might raise questions about current courses of action” (p. 708).

As it relates to my dissertation, and differentiated forms of voice, prohibitive voice can be especially threatening because it points out that there is a discrepancy between where the team should be and where it is – thus, it highlights an impending loss or cost if the team does not act, and losses and costs are perceived as threatening (Staw et al., 1981). Promotive voice can be considered a threat to the team, as well, because it indicates the need to disrupt the status quo or undertake change to achieve team goals. If voice is perceived as threatening, it is important to understand the effect that this will have on the team. Thus, I draw on threat rigidity theory (Staw et al. 1981) to explain how voice can trigger relationship conflict.

The key principal underlying threat rigidity theory is that “a threat to the vital interests of an entity [i.e. a team]... will lead to forms of rigidity” (Staw et al., 1981, p. 502). In terms of what this means for the team, and what threat entails, when members experience threat they become more adversarial and defensive with each other (Dutton & Jackson, 1987; Ross & Staw, 1993; Staw et al., 1981). Moreover, inherent in the rigidity reaction are excessive, dysfunctional levels anxiety and stress (Schein, 1987; 1993). Threat can also trigger active and negative emotions, such as fear, anger, and resentment (Renfro, Duran, Stephan, & Clason, 2006), contempt and disgust (Mackie, Devos, & Smith, 2000), and forced vulnerability (MacLeod & Hagan, 1992). The primary reason for these outcomes is that threat-induced behavior is concerned with averting loss and protecting the self (Dutton, 1992; Hartman & Nelson, 1996; Mittal & Ross, 1998). In sum, threat can overwhelm members' emotional, cognitive and behavioral capacities in a way that has a direct implication for triggering relationship conflict.

As noted earlier, relationship conflict is characterized by team members feeling tension and friction with each other (Jehn, 1995) as well as “feelings such as annoyance, frustration, and irritation” (Jehn & Mannix, 2001, p. 238). Importantly, when team members experience threat, they become more adversarial, hostile, and defensive while also experiencing more fear, anxiety, and stress. So, for example, when a team member experiences threat, they are less likely to want to collaborate with their fellow team members, thus making teamwork in general more difficult and likely causing frustrations for the entire team, and they become less enjoyable to work with, as a result of the increased levels of fear, stress, hostility, and anxiety.

Additionally, when team members experience high levels of stress and anxiety, they become more focused on the deficiencies of their fellow team members (Staw et al., 1981), exhibit more antagonistic or accusatory attributions for other team members’ behavior (Baron, 1991; Janssen & Veenstra, 1999), and experience less favorable evaluations of previous intragroup interactions (Zander, 1979). Thus, when team members experience threat, they are more likely to not only feel more “annoyed, frustrated, and irritated” (Jehn & Mannix, 2001, p. 238) with their fellow team members, but also more likely to express those thoughts and feelings – all of which is associated with increased relationship conflict.

To summarize, voice can be perceived as a threat because it either challenges the status quo (such as the case of promotive voice) or points out mistakes and errors that the team or individual members are making (such as the case of prohibitive voice). When the team experiences threat, members 1) become more hostile, adversarial, and defensive to protect the self and 2) are more likely to experience fear,

anxiety, and stress; both of these states are associated with outcomes and behaviors that can trigger the emergence of relationship conflict. Although threat rigidity theory provides an important explanation for why voice might trigger relationship conflict, it is not the only reason why and it does not explain why voice may also decrease relationship conflict. To address this issue, I also draw on regulatory focus theory.

Regulatory Focus Theory

I draw on regulatory focus theory (Higgins 1997; 1998) to further explain and predict how different forms of voice may differentially impact relationship conflict. Regulatory focus theory (Higgins, 1997; 1998) identifies the following two motivational systems: 1) a promotion focus, which facilitates the fulfillment of people's nurturance needs through the pursuit of hopes and aspirations and is concerned with personal growth and advancement, and 2) a prevention focus, which allows people to achieve security needs through the fulfillment of duties and obligations and is concerned with safety and protection. When pursuing promotion concerns, people are in a state of eagerness. They strive toward rewarding outcomes (i.e., gains), and they try to avert the absence of positive outcomes (i.e., nongains, or missed opportunities). When people are prevention-focused, in contrast, they use vigilance strategies, in that they work to avert negative outcomes (i.e., losses) and strive toward the absence of negative outcomes (i.e., nonlosses, or absence of threats). The two regulatory focus systems can co-exist in the same individual to some degree and an individual can adopt both foci (Wallace & Chen, 2006).

A large literature has documented the cognitive, emotional, and behavioral manifestations of regulatory focus, both as a chronic disposition and when it is

activated temporarily (see Molden, Lee, & Higgins, 2008). Consistent with a concern for growth and advancement, promotion-focused people are more likely to attend to and recall events that signal the presence or absence of positive outcomes (Higgins, Roney, Crowe, & Hymes, 1994; Higgins & Tykocinski, 1992), experience positive outcomes with more cheerfulness, and experience negative outcomes with lower intensity (Higgins, 1997; Idson, Liberman, & Higgins, 2000). Promotion-focused people tend to prefer approach strategies for goal attainment (e.g., pursuing all available means for advancement; Förster, Higgins, & Idson, 1998) and tend to focus on interpersonal strategies geared toward promoting desired outcomes (Higgins et al., 1994).

Consistent with a concern for security, prevention-focused people are more inclined to attend to and recall events signaling the presence or absence of negative outcomes (Higgins et al., 1994; Higgins & Tykocinski, 1992), experience negative outcomes more intensely and with more agitation, and experience positive outcomes with lower intensity (Higgins, 1997; Idson et al., 2000). Prevention-focused people prefer avoidance strategies for goal attainment (e.g., carefully avoiding mistakes; Förster et al., 1998; Higgins et al., 1994) and engage in more concrete information processing (Crowe & Higgins, 1997; Förster & Higgins, 2005).

A particular focus can be activated momentarily by situations that convey gain/reward-related information (and highlight nurturance needs) or loss/threat-related information (and highlight security needs; Shah, Higgins, & Friedman, 1998). Moreover, employee behaviors can influence the regulatory foci and behaviors of others (Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008). Thus, even though a

person can have an enduring or chronic regulatory focus (Higgins, 1997; 1998), it is also a malleable psychological state that can be evoked by situational cues (Crowe & Higgins, 1997; Wallace & Chen, 2006). Thus, voice has the potential to act as this type of “situational cue” and evoke either a promotion or prevention mindset.

Promotive voice can be seen as a behavior that highlights strategies for pursuing desirable outcomes, averting the absence of positive outcomes, and pursuing new opportunities for the team – thus, it provides gain/reward-related information; therefore, team promotive voice should act as a situational cue that triggers a promotion focus within the team. On the other hand, prohibitive voice can be seen as a behavior that highlights strategies for avoiding undesirable situations, averting negative outcomes (i.e., losses), and identifying risks and threats to the team – thus, it provides loss/threat-related information; therefore, team prohibitive voice should act as a situational cue that triggers a prevention focus within the team. This suggestions is in line with work that has theorized that team promotive voice triggers a promotion mindset and team prohibitive voice triggers a prevention mindset (Li et al., 2017) and empirical work that found that a preventative disposition was correlated with prohibitive voice and a promotion disposition was correlated with promotive voice (Lin & Johnson, 2015).

In terms of how these two foci relate to relationship conflict, as argued above, prohibitive voice is more likely to be perceived as threatening by team members (especially compared to promotive voice), and is also more likely to place team members into a prevention mindset. When members of a team are in a prevention mindset they are more likely to experience negative outcomes more intensely and

with greater agitation (Higgins, 1997; Idson et al., 2000). So, for example, when members of a team are made aware of mistakes, problems, and errors affecting the team as a whole, not only will this trigger a prevention mindset, but once that foci is activated team members are more likely to be agitated and frustrated by this information. This has a direct implication for triggering relationship conflict since that same agitation and frustration can be directed towards members of the team and result in a general feeling of “annoyance, frustration, and irritation” (Jehn & Mannix, 2001, p. 238) amongst the team as whole.

As for promotive voice though, it should be less likely to trigger threat and more likely to trigger a promotion mindset within the team, since it highlights new opportunities for the team as well as contains within the message strategies for pursuing those new desirable outcomes. Members of a team who are promotion focused experience positive outcomes more intensely and with more cheerfulness (Higgins, 1997; Idson et al., 2000), meaning they should be more enjoyable to work alongside and thus frustrations and irritations amongst members are less likely to emerge; additionally, members in this mindset will collectively utilize interpersonal strategies geared toward pursuing new opportunities for the team in a functional manner (Higgins et al., 1994) and since relationship conflict amongst members will obviously impede the team from realizing those opportunities, members are more likely to interact in a way that lessens the likelihood of conflict emerging. Therefore, theoretically, when a promotion mindset is activated it should lessen the emergence of relationship conflict.

Integrating threat rigidity theory and regulatory focus theory. The theoretical frameworks outlined above offer complementary insights into how voice can trigger relationship conflict. For example, team prohibitive voice is more likely to be construed as a threat by members of the team and is more likely to act as a situational cue that triggers a prevention mindset amongst team members. As noted above, when teams experience threat and when they are in a prevention mindset, members should be more likely to exhibit “annoyance, frustration, and irritation” (Jehn & Mannix, 2001, p. 238) with each other and thus relationship conflict is more likely to emerge. However, team promotive voice is less likely to trigger threat and is more likely to act as a situational cue that triggers a promotion mindset amongst team members. When team members perceive new opportunities for the team or when they are in a promotion mindset, members are less likely to exhibit “annoyance, frustration, and irritation” (Jehn & Mannix, 2001, p. 238) with each other and thus relationship conflict is less likely to emerge. Highlighting these commonalities from both theoretical frameworks helps serve as a foundation for my hypotheses and my overall core theoretical argument: voice is more likely to increase relationship conflict when it is more threatening and when it triggers a prevention mindset in teammates and it is more likely to decrease relationship conflict when it is less threatening (and highlights opportunities) and triggers a promotion mindset in teammates.

Voice and Relationship Conflict

As outlined above, several decades of work in the voice literature has hinted at and softly alluded to (though, yet to demonstrate) the potential for voice to result in

relationship conflict. For example, in their clarification of the voice construct, LePine and Van Dyne (1998) wrote, “since voice behaviors are often aimed at changing the status quo, they may upset interpersonal relationships” (p. 854). Frese and Fay (2001) suggested that voice might harm relationships with team members, since voice introduces changes that may upset the status quo, and, “Changes usually do not work out perfectly from the very beginning; they often involve setbacks and failure. People affected by the changes may not like having to adapt to something new and being forced to abandon their routine” (p. 141). Campbell (2000) argued that, “Proactive employees do things that were originally unanticipated, and this opens the door to all sorts of potential disagreements” (p. 57). Grant and Ashford (2008) made similar references when they wrote, “Insofar as proactive behavior involves expending additional effort, challenging the status quo, and disrupting or deviating from assigned tasks, prescribed roles, reified norms, accepted practices, and existing routines, researchers should expect to find mixed effects and unintended consequences for groups, organizations, and employees themselves” (p. 24). Thus, even though prior research has shown that voice has the potential to improve team performance, a close examination of the literature suggests that it also has the potential to harm team performance by triggering relationship conflict. However, building on the theoretical frameworks outlined above, whether or not voice increases or decreases relationship conflict depends on both the content of voice (i.e. promotive versus prohibitive) as well as the teams’ ability to handle and act on it.

Though relationship conflict is a team-level construct, it emerges out of and results from relationships that individual team members have with each other and

how they feel about each other (Korsgaard et al., 2008). Relationship conflict is high when individuals feel interpersonal incompatibility towards each other and it manifests as interpersonal tension, annoyance, or animosity; on the other hand, relationship conflict is low when individuals feel interpersonal harmony towards each other and, in this situation, it manifests as liking, appreciation, and respect (Jehn, 1995). Thus, when considering how voice impacts relationship conflict, it is necessary to consider how speaking up affects the relationships that team members have with each other. In looking at the effects of promotive and prohibitive voice on relationship conflict, I first explore the effects independently (i.e., prohibitive voice → relationship conflict; promotive voice → relationship conflict) and then compare and contrast both forms simultaneously (i.e., promotive versus prohibitive voice → relationship conflict). Following this, I elaborate on the role that team trust plays as a moderator.

Prohibitive Voice and Relationship Conflict

I expect that prohibitive voice is likely to increase relationship conflict. Though prohibitive voice can serve an important function for effective team functioning, since it has the potential to both correct and prevent problems (Liang et al., 2012), it also raises alarming messages and places previously undetected problems on the team agenda. When team members engage in prohibitive voice they are expressing concern about work practices, incidents, or employee behavior that are harmful to their team. In this way, prohibitive voice may result in negative, dysfunctional, and defensive reactions (Liang et al., 2012) and is likely to trigger a perception of threat as well as a prevention mindset in team members.

Support for these arguments can be found in research looking at how managers react to challenging (i.e. prohibitive) forms of voice, which has found that it can result in outcomes similar to relationship conflict; extending this work to how fellow team members might react is helpful for understanding why prohibitive voice can lead to relationship conflict. For example, Burris (2012) focused on how managers respond to both the act of engaging in voice and the content of the message. Across three studies, he found that when voice is seen as supportive of the status quo rather than challenging, managers are less likely to feel threatened. This finding underscores the potential costs associated with the particularly challenging aspects of voice, even though the challenge is valuable, and perhaps even necessary, for uncovering problems and the need for corrective action. Additionally, it has been argued that even managers who sincerely wish to be open to employees' ideas and concerns may feel vulnerable or threatened by input that is critical of existing policies or practices (Ashford, Sutcliffe, & Christianson, 2009), and they may therefore respond in a defensive or hostile manner. Finally, Fast et al. (2014) illustrated that leaders are more responsive to voice when they do not feel ego threatened – i.e. when the voice does not point out mistakes or questions a leaders tactics.

Turning to prohibitive voice as a collective team phenomenon, this process is likely to parallel what we know about the threat-rigidity effect (Staw et al., 1981). As noted above, the key principal underlying threat rigidity theory is that when a stimuli (such as voice) is perceived as threatening, people experience more active, negative emotions (e.g., anger, frustration, resentment) and become more hostile, adversarial, and defensive with each other (Dutton & Jackson, 1987; Ross & Staw, 1993; Staw et

al., 1981; Woolley, 2011). Prior voice literature has suggested that voice can be threatening (cf. Ashford et al. 2009; Burris, 2012; Fast et al., 2014) and I further argue that prohibitive voice can be especially threatening because it highlights an impending loss or cost if the team does not act on the content of voice, since losses and costs are perceived as threatening (Staw et al., 1981). Some examples of responses to external threats are decreased feelings of cohesion (Staw et al., 1981) and blaming others for failures (Worchel, Andreoli, & Folger, 1977) – outcomes associated with increased relationship conflict. Ultimately, an increased sense of threat should be associated with higher levels of relationship conflict for two reasons.

First, when individuals experience threat they become focused on protecting the self and, as a result, become more adversarial, hostile, and defensive (Dutton & Jackson, 1987; Ross & Staw, 1993; Staw et al., 1981), reactions that can trigger the emergence of relationship conflict (Jehn, 1995). Second, when members experience threat, this results in increased feelings of stress and anxiety (Vince & Broussine, 1996), which can spill over to negatively impact how members interact with each other (Jehn & Mannix, 2001; Staw et al., 1981). Stress and anxiety associated with perceived threat increases member salience of other member's deficiencies (Staw et al., 1981), encourages antagonistic or accusatory attributions for other team members' behavior (Baron, 1991; Janssen & Veenstra, 1999), and reduces favorable evaluations of previous relationships (Zander, 1979) – outcomes that will also manifest as relationship conflict.

Building on regulatory focus theory (Higgins, 1997; 1998), prohibitive voice can be seen as a behavior that highlights strategies for avoiding undesirable outcomes

and thus triggers team members to enter a more prevention-oriented mindset. When members are in a prevention mindset they are more likely to experience negative outcomes more intensely and with greater agitation (Higgins, 1997; Idson et al., 2000); thus, when team members engages in prohibitive voice and point out problems or mistakes, the team will have a more negative reaction to that behavior and be more likely to become agitated – outcomes that are associated with relationship conflict. Additionally, those who are in a prevention mindset endorse fewer hypotheses for others' behaviors and thus are more likely to have a defensive view of the behavior of all their fellow team members (Liberman, Molden, Idson, & Higgins, 2001). Thus:

Hypothesis 1: There is a positive relationship between team prohibitive voice and team relationship conflict.

Promotive Voice and Relationship Conflict

Unlike prohibitive voice, I expect that promotive voice has the potential to both decrease and increase relationship conflict (i.e. there may be an overall “net zero effect”). On the one hand, promotive voice is a proactive behavior that involves pointing out ways that a team and its members can function more effectively and suggesting solutions for improvement. When team members engage in promotive voice they are pointing out ways that a team can function more effectively and providing suggestions for long-term improvements by highlighting a future ideal state. In this way, and building on threat rigidity theory and regulatory focus theory, promotive voice may result in openness and possibility (Liang et al., 2012) – thus, this form of voice is likely to be perceived as non-threatening (Staw et al., 1981) and will trigger promotion mindsets (Higgins, 1997; 1998). If team members do not feel

threatened, and thus are less defensive and adversarial with each other, they are more likely to experience feelings of cohesion (Beal, Cohen, Burke, & McLendon, 2003) – and cohesion and conflict are negatively related (Jehn, 1994; Porter & Lilly, 1996). Additionally, as pointed out above when discussing regulatory focus theory, promotive voice can be seen as behavior that highlights strategies for pursuing desirable outcomes and should trigger a promotion focused mindset in team members. Those in a promotion mindset are sensitive to positive partner behaviors because they support the underlying desire for successful conflict resolution as well as relationship growth and advancement (Winterheld & Simpson, 2011) – and these outcomes should be associated with reduced relationship conflict as well. Therefore, taken together, team promotive voice has the potential to reduce relationship conflict.

On the other hand, even though the suggestions involved in promotive voice are expected to bring about improvements and benefit the team, it may also lead to relationship conflict. This is because promotive voice also involves challenging the status quo, which can be threatening (Staw et al., 1981), can evoke negative emotional reactions from coworkers (e.g., frustration, anxiety, fear, dissatisfaction, etc.), and increase uncertainty in the team, or cause infighting and bickering among team members. Employees engaging in promotive voice may create more workload and more stress for others, because they challenge role boundaries and introduce tasks that would not arise when only fulfilling formal job descriptions. These additional tasks and new ways of task accomplishment may also have a negative impact on the tasks and work processes of other team members. For example, if a team member suggests a more customer-oriented work procedure, even though this new process

may improve the overall performance of the team, it changes the way the team previously performed its tasks and can increase the workload for all members. Thus, working procedures and the workload of colleagues can be negatively affected through this behavior. These possibilities led MacKenzie et al. (2011) to suggest that team voice may result in relationship conflict. Researchers have also begun to point out that supervisors may see proactive behaviors like voice as a threat (Frese & Fay, 2001; Miceli & Near, 1994; Parker, Williams, & Turner, 2006), an ingratiation attempt (Bolino, 1999), or resent the voicer (Grant & Parker, 2009). Moreover, promotive voice has the potential to introduce major changes to the team; this is risky, since, employees are often resistant to change (Lewin, 1952; Ford, Ford, & D'Amelio, 2008; Oreg, 2003) – and even positive changes can be difficult for employees (Frese & Fay, 2001), since people enjoy habitual routines (Gersick & Hackman, 1990). Thus, promotive voice has the capacity to both decrease and increase relationship conflict. Since it is not possible to formally test a null hypothesis, I propose the following research question:

Research Question 1: Is there a relationship between team promotive voice and team relationship conflict?

Promotive versus Prohibitive Voice and Relationship Conflict

As argued above, prohibitive voice is likely to have a more straightforward and direct positive causal effect on relationship conflict, whereas promotive voice is likely to have a net-zero effect. Even though voice is a proactive behavior that is undertaken to improve team functioning, it is a behavior that also has within it the latent potential to create conflict in the form of interpersonal friction, personality

clashes, and even anger because of the disruption to the status quo – and this potential is more pronounced in prohibitive voice relative to promotive voice. Comparatively then, since prohibitive voice highlights and points out mistakes and errors, it is more likely to trigger relationship conflict than a behavior like promotive voice that potentially disrupts the status quo and increases workload (and thus can result in relationship conflict) but also has “redeeming qualities” like pointing out opportunities for the team and triggering promotion mindsets in team members. Additionally, prohibitive voice does not necessarily provide solutions or suggestions about resolving the concerns voiced (Liang et al., 2012) – and thus it does not have the “redeeming qualities” that promotive voice does, which could act as a buffer against triggering relationship conflict. Put differently, there is an argument for a positive relationship between prohibitive voice as well as an argument for a weak/null relationship between promotive voice and relationship conflict. Comparatively then, prohibitive voice is more likely to result in relationship conflict than promotive voice. Thus:

Hypothesis 2: There is a stronger, more positive relationship between prohibitive voice and relationship conflict than between promotive voice and relationship conflict.

Though these main effect relationships are important, the effects of voice are based on two interrelated assumptions: first, that the voice is “heard” and, second, that the team is able to act on the content of the voice. Thus, it is useful to examine how the association between promotive and prohibitive voice and relationship conflict can vary as a function of whether or not the team possesses the capacity to

handle acting on it. Thus, I argue that team trust acts as a critical boundary condition explaining the relationship between team voice and relationship conflict because it acts as a climate that the team can use to handle the disruption inherent in voice without devolving into anger, frustration, and resentment. Before outlining the reasons why team trust acts as this boundary condition, I first start with a review of the construct.

Team Trust as a Moderator

Since voice deals with pointing out potential problems and addressing them by changing the course of the team, it has the potential to lead to debates or disagreements among team members, which could trigger the type of personal resentments associated with relationship conflict. For example, Baron (1984) reports that, “often, what starts as a rational exchange of opposing views deteriorates into an emotion laden exchange . . . in which strong negative feelings are aroused” (p. 272). Individuals often have trouble distinguishing cognitive disagreements, such as those introduced to a team through voice, from personal attacks (Amason & Sapienza, 1997; Jehn & Mannix, 2001; Simons & Peterson, 2000), which could influence the effects of both forms of voice on relationship conflict. However, trust acts as a critical moderator of the relationship between individual actions and individual and team outcomes (Dirks & Ferrin, 2001) and can reduce conflict (Porter & Lilly, 1996). Thus, as argued below, team trust should play an important role in determining when voice does or does not trigger relationship conflict.

As noted above, team trust denotes a shared generalized perceptions that team members can depend on their fellow teammates. When there is a high level of team

trust, members exhibit a willingness to be vulnerable to each other (Mayer et al., 1995) and hold positive expectations of member actions (Colquitt et al., 2011); inversely, low levels of team trust is not simply a “lack” of this climate at the team level, but instead will manifest itself as an active distrust such that members are unwilling to be vulnerable with each other and exhibit negative expectations about each other. Trust allows team members to suspend their judgment about others, which helps overcome misunderstandings and conflicts that may arise from voice (De Jong & Elfring, 2010). Overall, I expect relationship conflict to be reduced by team trust, because trust allows members to interact with one another as if their uncertainty and vulnerability were resolved. Team members who trust each other are more likely to engage in productive interactions and teamwork processes that reduce dysfunctional outcomes like relationship conflict (Jones & George, 1998; Spreitzer & Mishra, 1999). By contrast, without a foundation of trust, members are more likely to view the behaviors of others with skepticism and resistance while protecting themselves from perceived vulnerability to the actions of fellow members (Dirks, 1999; Mayer & Gavin, 2005), thereby creating the conditions for relationship conflict to more easily emerge.

Prior work has found that the relationship between task conflict (which shares similarities with team voice) and relationship conflict is weakened when team trust is high (Choi and Cho, 2011; Peterson & Behfar, 2003; Simons & Peterson, 2000). One reason for this effect is that when trust is high (low), members are less (more) likely to attribute task-related disagreements as personal attacks. When this attribution process points toward a personal attack (Jehn, 1997; Torrance, 1957) or a hidden

agenda (Amason & Sapienza, 1997; Eisenhardt & Bourgeois, 1988), biased information processing (Fiske & Taylor, 1991) can trigger relationship conflict. However, more than just acting as a team climate that reduces the likelihood of members misattributing behaviors like voice as a personal attack, team trust also helps explain when voice is less likely to trigger perceptions of threat as well as a prevention or promotion mindset.

For example, threat rigidity theory provides insights into how trust can play an important role in determining when voice is more versus less likely to trigger perceptions of threat. Threat perception is defined as a sense of vulnerability that is assumed to be negative (Dutton & Jackson, 1987; Jackson & Dutton, 1988). Thus, any factor that would reduce the perception of vulnerability should decrease the likelihood of threat being triggered. A belief that members are concerned about the best interests of each other should lead to less threatening appraisals because members believe that others are acting with the best interests of the team in mind. Additionally, when trust is high, members are less likely to view voice as threatening because they are willing to be vulnerable to taking the team in a new direction (per the content of prohibitive voice) or work to correct previous or future mistakes and errors (per the content of prohibitive voice).

As it relates to regulatory focus, and when behaviors like voice are likely to trigger a promotion versus a prevention mindset within team members, McAllister (1995) argued that the confident positive expectations underlying trust motivate team members to strive toward team goal attainment, because they make team members more sensitive to the positive outcomes associated with team accomplishment and

less sensitive to the negative outcomes associated with being vulnerable to the actions of teammates. Thus, team trust creates the conditions that encourage a promotion, as opposed to prevention, mindset to emerge. This promotive focus mindset motivates team members to actively seek ways to work more effectively together to help their team succeed. Thus, when trust is high, behaviors like voice should be more likely to trigger promotion focused mindsets in the team, which will reduce relationship conflict.

Thus, if team trust is high, behaviors like voice that introduce changes to the status quo, challenge the direction of the team, and point out errors and mistakes are less likely to trigger perceptions of threat or a prevention mindset. In fact, if trust is high, speaking up with a promotion or prevention mindset may actually result in a sense of collective opportunity or promotion mindset. Team trust creates conditions where members can reflect on the content of voice in a safe atmosphere (Edmondson & Lei, 2014) without damaging their relationship with others (Simons & Peterson, 2000). However, if team trust is low, when members of the team engage in either prohibitive or promotive voice, these behaviors are more likely to trigger perceptions of threat and a prevention mindset. Ultimately, team trust operates as a functional team climate that allows the team to collectively handle the disruptive elements of voice without it triggering perceptions of threat or a prevention mindset that can cause relationship conflict.

Even though team trust operates as a critical boundary condition, considering the arguments laid out with Hypothesis 2, and the differing content of prohibitive versus promotive voice, team trust will differentially moderate these two forms of

voice. As argued above, prohibitive voice is likely to have a more straightforward and direct positive relationship with relationship conflict. Since the content of this form of voice deals with pointing out mistakes and errors, it can operate as a control mechanism and can trigger threat and a prevention mindset. However, when team trust is high and members engage in this form of voice, it is more likely that members will perceive the behavior as “looking out for the team” rather than a means to try to control them in a distrustful manner (McAllister, 1995; Salas, Sims, & Burke, 2005). Put differently, since prohibitive voice is threatening, even the highest levels of trust are unlikely to change the direction of the effect and more prohibitive voice will not *decrease* relationship conflict – high levels of team trust will simply buffer the more negative effects of this form of voice. However, when team trust is low, prohibitive voice is more likely to trigger perceptions of threat and a prevention mindset, thus intensifying relationship conflict. Thus:

Hypothesis 3: Team trust negatively moderates the positive relationship between prohibitive voice and relationship conflict, such that as team trust decreases, the relationship between prohibitive voice and relationship conflict becomes more positive.

Regarding promotive voice, it has the potential to both increase and decrease relationship conflict. This form of voice brings up ways that a team can function more effectively, which might reduce relationship conflict by illustrating opportunities and encouraging a promotion mindset in members; however, it also potentially increases workload and challenges the status quo, which might be threatening and thus increase relationship conflict. Thus, I believe that the direction of this relationship will depend

on the level of team trust. When team trust is high, promotive voice is more likely to be perceived as less threatening (or even as illustrating opportunities for the team) and will result in a promotion mindset, thus decreasing relationship conflict.

However, when team trust is low, and members are unwilling to be vulnerable with each other and exhibit negative expectations about each other, even a behavior like promotive voice is likely to be met with frustration by team members and increase conflict. Thus:

Hypothesis 4: Team trust negatively moderates the net-zero relationship between promotive voice and relationship conflict, such that as team trust increases, the relationship between promotive voice and relationship conflict becomes less positive and as team trust decreases, the relationship between promotive voice and relationship conflict becomes more positive.

Relationship Conflict and Team Performance

In line with prior studies (Amason, 1996; De Dreu & Weingart, 2003; Jehn, 1997; 1995) and meta-analyses (De Dreu & Weingart, 2003; de Wit et al., 2012; O'Neill et al., 2013), I expect team relationship conflict will be negatively related to team performance. Amason (1996; Amason & Schweiger, 1997) and Jehn (1995, 1997) noted that relationship conflict generally decreases satisfaction within the team and interferes with team performance. Relationship conflict can undermine and impair team performance because it reduces the ability of the team to collaborate and problem solve (De Dreu, 2006) and the time that members spend addressing non-task issues could be spent more efficiently on task accomplishment (Evan, 1965). Thus:

Hypothesis 5: There is a negative relationship between relationship conflict and team performance.

Taken together, the above hypotheses (and research question) form the moderated mediation model depicted in Figure 1 and my overall theoretical framework. Given that prior work has suggested (though yet to adequately demonstrate) that voice can harm team functioning (Ashford et al., 2008; LePine & Van Dyne, 1998; MacKenzie et al., 2011; Morrison, 2011; 2014), since it can “upset interpersonal relationships (LePine & Van Dyne, 1998, p. 854), the purpose of my dissertation is to better contribute to the voice, teams, relationship conflict, and trust literatures by enhancing our understanding of when, how, and why voice can undermine team performance. The theoretical model I propose fulfills that goal. I propose that relationship conflict mediates the link between team voice and team performance. However, to understand the effects of speaking up on team performance, it is necessary to take into consideration the type of voice the team is engaging in – as well as the climate of trust that exists within the team.

When teams engage in high levels of prohibitive voice, this is more likely to trigger threat and a prevention mindset amongst member and thus relationship conflict is more likely to emerge (Hypothesis 1), which will ultimately undermine team performance (Hypothesis 5); however, in teams with lower team trust, the strength of the relationship between team prohibitive voice and team relationship conflict will be stronger (Hypothesis 3); thus, the team will be sidetracked by members feeling frustration, anger, and hostility towards each other and ultimately be unable to benefit from the content of this voice to rectify or avoid mistakes and errors

when team trust is low – and thus experience a decrease in overall performance.

Thus:

Hypothesis 6: Team trust moderates the extent to which relationship conflict mediates the relationship between team prohibitive voice and team performance: relationship conflict is more likely to mediate between team prohibitive voice and team performance when team trust is lower than when team trust is higher.

When teams engage in high levels of promotive voice, this can reduce relationship conflict, because it can be seen as highlighting opportunities and triggering a promotion mindset, or it can increase relationship conflict, because it can be seen as disrupting the status quo and creating more work for others (Research Question 1). When team trust is high, though, promotive voice is more likely to reduce relationship conflict (Hypothesis 4), meaning that the team is more likely to be able to benefit from this form of voice in terms of improved team performance; however, when team trust is low, promotive voice can trigger relationship conflict (Hypothesis 4), which will harm team performance (Hypothesis 5). Thus:

Hypothesis 7: Team trust moderates the extent to which relationship conflict mediates the relationship between team promotive voice and team performance: relationship conflict is more likely to positively mediate between team promotive voice and team performance when team trust is higher and is likely to negatively mediate between team promotive voice and team performance when team trust is lower.

Overview of Studies

To test my theoretical model, I conducted two studies. Study 1 was a time-lagged, laboratory study with 87 teams. Teams participated in the Everest Simulation, a two-hour computer simulation where teams have to work together to summit Mt. Everest. I operationalized the core measures in my model in several ways (i.e. behavioral codings and team-referent ratings of voice) in an attempt to validate my measures and test my hypotheses with different measures as a means of triangulation; I also collected additional measures (i.e., task conflict, team monitoring, and negative affect) to test alternative specifications of my model. Study 2 was a time-lagged, field study with 49 teams. Teams were composed of United States Air Force (USAF) officers participating in a six-week leadership development course at Maxwell Air Force Base. Because of the need for a highly condensed survey, I operationalized the core measures in my model through single-item measures; however, I was able to collect data from both student participants as well as instructors at two time points. Team performance was measured as an aggregate of a team's objective performance on seven team activities over the course of the program.

Chapter 4: Study 1

Methods

Sample. I recruited 493 undergraduate students enrolled in an introductory management class at an East Coast public university to complete a two-hour, team decision making simulation in return for course credit ($M_{\text{age}} = 20.27$ [$SD = .98$], 43.3% female). Participants were randomly assigned to either five or six person teams. There were 87 teams; 58 teams had six members and 29 teams had five members¹. Each member in the top five performing teams received \$20 and the top five performing individuals for each role also received \$20; this was done to equally incentivize both individual and team performance. There was no exclusion of any individuals or teams from the analysis. Sessions were video recorded to conduct behavioral codings of voice.

Procedure. Participants engaged in the web-based Everest Leadership and Team Simulation (Roberto & Edmondson, 2011). Each session was run in its own room. Upon arriving, I randomly assigned students to their teams and roles. After this, I read through a script (see Appendix A) and then participants were introduced to the simulation. Participants had two hours to complete it. At the mid-point of the simulation (Time 1; approximately 45 minutes into the simulation) and at the end (Time 2; approximately an hour and a half into the simulation), participants

¹ Controlling for team size did not substantially change any my findings (i.e. there were no differences in what was or was not significant, did not substantially change the direction or magnitude of estimates, etc.)

completed a survey. By collecting the same measures in Time 1 and Time 2, I was able to test alternative specifications of my model and attempt to rule out certain alternative explanations – i.e. Time 1 relationship conflict causes a reduction in Time 2 voice versus, as my theory proposes, Time 1 voice triggers Time 2 relationship conflict. Based on the design of the simulation, and the fact that the simulation automatically administers a survey to participants at the mid-point and the end, I administered my Time 1 and 2 surveys to correspond with these times, to minimize disruption from the flow of the simulation.

Task. The simulation entails teams summiting Mt. Everest. Members have both common and unique goals, which are associated with point values. Team roles included a leader, physician, photographer, marathoner, and environmentalist. In 58 teams (67%), there was a sixth role – the observer, who stays at base camp but can monitor team progress and give suggestions. The simulation can accommodate five or six members and the design of the study was such that six participants could sign up for a specific time slot and in instances where one member did not show up, the team could still be run with five members. The simulation consists of six rounds (corresponding to “six climbing days”) in which teams must attempt to hike from base camp to the summit. Each day/round, members can hike up to the next camp, stay at their current camp, or hike down to the previous camp.

The simulation is designed such that teams are faced with asymmetric information. Thus, success depends on how well individuals communicate and integrate information in decision making. There are also asymmetric goals in the simulation (i.e. some individual goals compete with other individual or team goals).

For example, the leader wants all members to stay together through the summit; however, the photographer wants to stay an extra day at Camp 1 and 2 and the environmentalist wants to stay an extra day at Camp 4. If a team is to accomplish its goal of reaching the summit, members cannot rest an extra day at both Camp 2 and Camp 4; the team can only rest an extra day at one camp and do so together. The team must prioritize goals and members who strictly pursue their own goals do so at the expense of the team. Overcoming these conflicts required an understanding that 1) members had conflicting goals and 2) there would be tradeoffs in pursuing certain goals over others to accomplish the overall team goals.

Before beginning, participants learn detailed information about their role, including the strengths and weaknesses of that role and a breakdown of points for achieving their goals. Members are only told about their priorities and do not see information about other team members' goals. The user interface of the simulation allows members to assess key components related to the team's ascent. The "Mountain View" shows each member's location on Everest. The "Dashboard" shows members information on 1) the weather conditions, 2) food supply, 3) medical supplies, 4) hiking speed, and 5) personal health data (i.e. overall health, frostbite risk, and mental acuity). The "Round Info" view provides members with a summary of the previous rounds' events and updated information each time the team moves forward a day.

In each round, members are provided new common *and* unique information. There were three team challenges, which were worth the most points for the team, and the "solution" to those problems were presented as unique pieces of information

to each member. Thus, there was information asymmetry and information interdependence – i.e. to complete the challenges, members had to work together to identify and share that unique information. Those challenges involved: 1) dispersion of medical supplies, 2) predicting the weather, and 3) determining the number of oxygen canister required to summit. These hidden challenges were overlaid with the daily decisions that members had to make about how to move up the mountain. All decisions impact which goals member can attain, each with its own point value. Members were free to discuss and coordinate what goals they would achieve and how they would achieve these goals, but were independent in their choice of actions at the conclusion of each round. Thus, there were numerous opportunities for both promotive and prohibitive voice throughout the simulation.

Measures. Unless otherwise noted, responses for all items were made on a five-point scale, ranging from 1 = *strongly disagree*, to 5 = *strongly agree*. Each set of items was aggregated to the team-level to create team-level measures and all operationalizations occurred at both Time 1 and 2. See Appendix B for a list of the full measures.

Team voice. Promotive and prohibitive voice were operationalized using a behavioral-coding of these behaviors. Using an additive model (Chan, 1998), I summed the total number of times individual members engaged in each respective form of voice to the team level by coding each of the video recorded sessions. I generated a behavioral coding scheme that specified each behavior in the context of the simulation (uses as a starting point, the coding scheme developed by Baker et al., 2017), capturing both forms of voice (see Appendix C for the coding scheme with

examples of what was, and was not, voice). Coded voice behaviors went beyond mere task communication or information sharing because they specified ways in which the team could do things more efficiently, fix or avoid problems, and specified solutions to issues; if a member did not offer a specific solution or propose a specific strategy, the behavior was not coded as voice. Coding consisted of counting the number of behaviors that captured promotive and prohibitive voice, across all members, at Time 1 (the first 3 days) and Time 2 (the last 3 days).

To validate my coding, I trained a graduate student on the voice constructs and the coding scheme. I first had him code videos of eight teams and reviewed his codings against my codings of the same eight teams. Calibration and reconciliation was done by both of us using timestamps and then I compared when every instance of either promotive or prohibitive voice was coded. For example, if I coded one act of promotive voice at minute 5, second 38 in Team 57, I checked that the RA also had coded one act of promotive voice at the same time. If I coded something that the RA missed, or the RA coded something at a time point that I did not have, we discussed the reason for that discrepancy and reconciled it. Once we reached a high level of consensus, I had him code 11 new team videos (distinct from the previous eight), which I had also coded. Coders exhibited a high level of inter-rater reliability – Time 1 prohibitive voice: $ICC(1) = .80$, $ICC(2) = .89$, $F_{(10,21)} = 9.16$, $p < .05$; Time 1 promotive voice: $ICC(1) = .58$, $ICC(2) = .73$, $F_{(10,21)} = 3.74$, $p < .05$; Time 2 prohibitive voice: $ICC(1) = .78$, $ICC(2) = .88$, $F_{(10,21)} = 8.01$, $p < .05$; Time 2 promotive voice: $ICC(1) = .64$, $ICC(2) = .78$, $F_{(10,21)} = 4.60$, $p < .05$.

I also tested my hypotheses with a team-referent measure of voice. Using a separate operationalization allowed me to triangulate my findings and referent-shift measures are commonly used in studies exploring the outcomes of team voice (cf., Frazier & Bowler, 2015; Lam & Mayer, 2014; Li et al., 2017; MacKenzie et al., 2011); using this approach, I am able to build on and connect to a larger body of prior work in a systematic fashion. Additionally, there were two reasons for collecting single-item, peer-rated measures of voice. First, since I knew I would use single-item measures of voice in Study 2, I wanted to collect single-item measures of voice in Study 1 so that I could compare correlations across studies as a means of validating the measures. Second, by having individual-level ratings of voice, I could test alternative relationships involving voice distribution in teams (cf. Sherf et al., 2018). Both approaches capture the emergent process that is theoretically happening – i.e., upward and lateral influence attempts by members to improve team functioning (Morrison, 2011), which originate in the individual actions of team members but has functional outcomes that emerge and are recognized at a team level. I provide validity results comparing these operationalizations of voice in Appendix D, the full results write up and tables for the team-referent hypothesis testing in Appendix E, and voice distribution results in Appendix F.

For the team-referent measure of promotive and prohibitive voice, I used the 10-item measure from Liang et al. (2012) – five items for each form of voice. To help improve the accuracy of this measure, I included a timer on survey pages so participants had to spend at least 20 seconds answering these items (i.e. to prevent participants just clicking through). The stem for both measures also included the

Liang et al. (2012) definition of promotive or prohibitive voice, with an emphasize that I was assessing more than just how much members of the team spoke in general. Individual responses for each measure were aggregated to the team-level to create the team-referent measures of team promotive and team prohibitive voice. As shown in Table 2, members exhibited a sufficient level of inter-member reliability and agreement, justifying aggregation to the team level for both Time 1 and Time 2; and as shown in Appendix D, these values are similar to those of other team-level voice studies. Additionally, as shown in Table 3, there were high correlations between the behavioral codings of voice and the team-referent measures, further validating both measures.

For the peer-rated measures, participants rated each members' promotive and prohibitive voice, using a single-item measure for each type of voice. I calculated the team-level measure by removing self-ratings from the focal person and averaging ratings from team members to create a peer-rated score for each member; then, I averaged each of those ratings for the five (or six) team members to create a team-level score. Members exhibited a sufficient level of inter-rater reliability and agreement, justifying aggregation to the focal member level for both Time 1 and 2 (see Appendix D); additionally, there were high correlations between the peer-rated measures and both the behavioral-coded and team-referent measures, further validating all measures.

Team trust. Team trust was operationalized using a team-referent measure of trust and an individual, peer-rated measure of trust. Multiple measures were collected to allow me to better validate constructs. For the team-referent measure of trust, I

used the five-item measure from Colquitt et al. (2011). With this measure of trust, two of the items were reverse coded and, when included in psychometric tests, produced poor measurement model fit statistics; this was likely driven by careless responses on the part of some participants (i.e. in 2% of cases, participants selected “5” for each Likert bubble). Thus, these two items were dropped and in all the analysis reported below a three-item measure of trust was used (testing my hypotheses with the five-item measure does not substantially change results). As shown in Table 2, members exhibited a sufficient level of inter-rater reliability and agreement, justifying aggregation to the team level.

To validate the team-referent measure of trust, I used a single-item measure and asked participants to rate each of their team members on trust. I calculated the team-level measure of peer-rated trust in the same way I calculated peer-rated voice. Time 1 team trust (team-referent) and Time 1 team trust (peer-rated) were correlated at .74 ($p < .05$); Time 2 team trust (team-referent) and Time 2 prohibitive voice (peer-rated) were correlated at .72 ($p < .05$). Taken together, these results support the validity of the team-referent measure of trust. When testing my hypotheses, I used the team-referent measure of trust.

Team relationship conflict. Relationship conflict was operationalized using the three-item measure from Jehn and Mannix (1999). Individual responses were aggregated to the team-level to create the team-referent measures of team relationship conflict. As shown in Table 2, members exhibited a sufficient level of inter-member reliability and agreement, justifying aggregation to the team level for both Time 1 and Time 2.

Team performance. Team performance was calculated based on the summed total of individual goals achieved by each team member and then calculated as a percentage of total possible goals achieved. The maximum number of points that an individual could achieve for each role were: leader – 17 points, physician – 7 points, marathoner – 6 points, photographer – 5 points, environmentalist – 4 points. Additionally, there were three team challenges worth 5 points each. Thus, the “theoretical” maximum score a team could earn was 54 points. However, because of competing goals, it was impossible for each team member to accomplish 100% of their individual goals and thus impossible for a team to earn 54 points. The actual maximum number of points that could be earned was 52, which was the figure used to determine the percentage of goals achieved. Team percentages for performance ranged from 6% to 94%.

Alternative measures. First, I wanted to test whether or not trust would moderate the link between task and relationship conflict, as shown in prior studies (Choi & Cho, 2011; Simons & Peterson, 2000); thus, I collected a measure of task conflict (Jehn & Mannix, 1999). In addition to looking at relationship conflict as an outcome of team voice, I also wanted to explore team monitoring as an outcome. Li et al. (2017) found that team monitoring mediates the relationship between voice and team performance; thus, I assessed team monitoring (De Jong & Elfring, 2010) to see if I could replicate these findings. Finally, though I do not model a mechanism linking promotive and prohibitive voice to relationship conflict, given that I theorize that voice can trigger negative emotional reactions, I assessed negative affect (Watson, Clark, & Tellegen, 1988) to test this. As shown in Table 2, for each of these

measures, members exhibited a sufficient level of inter-rater reliability and agreement, justifying aggregation to the team level.

Analytic Approach

Psychometric properties of the measures. To examine my full measurement model, I conducted confirmatory factor analyses (CFAs) in LISREL, with the item-level data for Time 1 and 2, on the five items measuring team-referent promotive voice, the five items measuring team-referent prohibitive voice, the three items measuring team trust, the three items measuring relationship conflict, the three items measuring task conflict, the four items measuring negative affect, and the three items measuring team monitoring. I also contrasted this seven-factor model against four more constrained alternative models. First, I set the promotive and prohibitive voice factors to correlate to 1.0; second, I set the task conflict and relationship conflict factors to correlate to 1.0; third, I set the promotive voice, prohibitive voice, and trust factors to correlate to 1.0 (since, as shown in Table 3, each of these measures were highly correlated); and, fourth, I set all seven factors to correlate to 1.0. I assessed the quality of my measurement model by both conducting chi-square difference tests as well as exploring goodness-of-fit indexes. Williams, Vandenberg, and Edwards (2009) suggested that RMSEA values $< .08$, CFI values that are $> .95$, and SRMR values that are $< .10$ are indicative of good fitting models.

Hypothesis Testing. I tested each hypothesis, using OLS regression, with the behavioral-coded measures of voice, which are reported below (I triangulate these finding using team-referent measures of voice, with results reported in Appendix E). I report the results in the tables such that Time 1 measures predicting Time 1 outcomes

are shown in the upper part of the table, Time 2 measures predicting Time 2 outcomes are shown in the middle part of the table, and Time 1 measures predicting Time 2 outcomes are shown in the lower part of the table.

Results

Psychometric Properties Time 1. As shown in Table 1, the measurement model for the Time 1 data produced fit statistics that met the Williams et al. (2009) suggested cutoff (RMSEA = .06, CFI = .97, SRMR = .05). The hypothesized seven-factor, baseline model fit the data significantly better than the following alternatives: 1) a seven-factor model with the promotive and prohibitive voice factors correlated to 1.0 ($\Delta\chi^2 = 167.70$, $df = 1$); 2) a seven-factor model with the task conflict and relationship conflict factors correlated to 1.0 ($\Delta\chi^2 = 413.89$, $df = 1$); 3) a seven-factor model with the promotive voice, prohibitive voice, and trust factors correlated to 1.0 ($\Delta\chi^2 = 748.56$, $df = 3$); and 4) a seven-factor model in which all factors were correlated to 1.0 ($\Delta\chi^2 = 4,619.77$, $df = 21$).

Psychometric Properties Time 2. As shown in Table 1, the measurement model for the Time 2 data produced fit statistics that met the Williams et al. (2009) suggested cutoff (RMSEA = .06, CFI = .98, SRMR = .06). The hypothesized seven-factor, baseline model fit the data significantly better than the following alternatives: 1) a seven-factor model with the promotive and prohibitive voice factors correlated to 1.0 ($\Delta\chi^2 = 250.19$, $df = 1$); 2) a seven-factor model with the task conflict and relationship conflict factors correlated to 1.0 ($\Delta\chi^2 = 419.07$, $df = 1$); 3) a seven-factor model with the promotive voice, prohibitive voice, and trust factors correlated to 1.0

($\Delta\chi^2 = 830.05$, $df = 3$); and 4) a seven-factor model in which all factors were correlated to 1.0 ($\Delta\chi^2 = 5,468.73$, $df = 21$).

Hypothesis Testing. Hypothesis 1 predicts that there is a positive relationship between prohibitive voice and relationship conflict. As shown in Table 4, there was a non-significant relationship between Time 1 prohibitive voice and Time 1 relationship conflict (upper part of Model 1a: $B = -.01$, $p = .68$), Time 2 prohibitive voice and Time 2 relationship conflict (middle part of Model 1a: $B = -.01$, $p = .61$), and Time 1 prohibitive voice and Time 2 relationship conflict (lower part of Model 1a: $B = .00$, $p = .84$). As shown across Table 4, Model 1c, these non-significant effects held when controlling for promotive voice. As shown in Appendix E, I also found a non-significant pattern of effects with the team-referent measures of prohibitive voice. Taken together, these results do not support Hypothesis 1.

After looking at the effects of prohibitive voice, I explored the effects of promotive voice on relationship conflict. I posed this as a research question, since it is possible that promotive voice could either increase or decrease relationship conflict. As shown in Table 4, there was a non-significant relationship between Time 1 promotive voice and Time 1 relationship conflict (upper part of Model 1b: $B = .00$, $p = .90$), Time 2 promotive voice and Time 2 relationship conflict (middle part of Model 1b: $B = .00$, $p = .83$), and Time 1 promotive voice and Time 2 relationship conflict (lower part of Model 1b: $B = .00$, $p = .69$). As shown across Table 4, Model 1c, these non-significant effects held when controlling for prohibitive voice. As shown in Appendix E, I did not replicate this non-significant pattern of effects with the team-referent measures of promotive voice; in fact, I found negative relationships.

However, given the potential for common method bias with these measures, the behavioral-coded measures are likely more valid. Thus, the more robust finding is that promotive voice has a null effect on relationship conflict (which is in line with my theorizing).

Hypothesis 2 predicts that there is a stronger, more positive relationship between prohibitive voice and relationship conflict than between promotive voice and relationship conflict. As shown in Table 4, Time 1 prohibitive voice (upper part Model 1c: $B = -.01, p = .64$) and Time 1 promotive voice (upper part Model 1c: $B = .00, p = .80$) were not related to Time 1 relationship conflict. Time 2 prohibitive voice (middle part Model 1c: $B = -.01, p = .65$) and Time 2 promotive voice (middle part Model 1c: $B = .00, p = .96$) were not related to Time 2 relationship conflict. Time 1 prohibitive voice (lower part Model 1c: $B = .00, p = .90$) and Time 1 promotive voice (lower part Model 1c: $B = .01, p = .71$) were not related to Time 2 relationship conflict. As outlined in Appendix E, testing this hypothesis with the team-referent measures of voice was problematic given issues of multicollinearity, and those results are unreliable. Thus, I did not find support for Hypothesis 2.

Hypothesis 3 predicts that team trust negatively moderates the positive relationship between prohibitive voice and relationship conflict, such that team trust weakens the positive relationship between prohibitive voice and relationship conflict. Even though I did not find support for my hypothesis that there would be a positive relationship between prohibitive voice and relationship conflict, based on my theorizing, it is still possible that when trust is low, prohibitive voice can trigger relationship conflict. As shown in Table 4, the interaction between Time 1 prohibitive

voice and Time 1 team trust, predicting Time 1 relationship conflict, was non-significant (upper part of model 2a: $B = -.05, p = .21$). However, both Time 2 prohibitive voice and Time 2 team trust, as well as Time 1 prohibitive voice and Time 1 team trust, negatively interacted to predict Time 2 relationship conflict ($B = -.08, p = .04$ and $B = -.12, p = .04$ – per middle and lower parts of Model 2a, respectively). As shown in Figures 2a and 2b, simple slopes capturing the relationship between prohibitive voice and relationship conflict were positive and significant when team trust was low (simple slope $B = .07, p = .02$ and $B = .10, p = .01$, for Time 2 and Time 1 measures, respectively), but not when team trust was high (simple slope $B = .00, p = .94$ and $B = .01, p = .83$, for Time 2 and Time 1 measures, respectively).

To test the strength of this interaction further, I also controlled for Time 1 relationship conflict for models predicting Time 2 relationship conflict. As shown in Table 4, the interaction between Time 2 prohibitive voice and Time 2 trust, predicting Time 2 relationship conflict, was still significant even when controlling for Time 1 relationship conflict (middle part of Model 4a: $B = -.08, p = .03$); additionally, the pattern of this interaction mirrored what is shown in Figure 2a and simple slopes capturing the relationship between prohibitive voice and relationship conflict were positive and significant when team trust was low (simple slope $B = .06, p = .01$), but not when team trust was high (simple slope $B = .00, p = .98$). However, when controlling for Time 1 relationship conflict, the interaction between Time 1 prohibitive voice and Time 1 trust, predicting Time 2 relationship conflict, was non-significant (lower part of Model 4a: $B = -.08, p = .11$). As shown in Appendix E, I did not replicate these interactions with the team-referent measure of prohibitive voice.

These results provide mixed support with the coded voiced behaviors for Hypothesis 3, but no support with the team-referent measures.

Hypothesis 4 predicts that team trust moderates the relationship between promotive voice and relationship conflict, such that when trust is high the relationship is negative (i.e. promotive voice reduces relationship conflict) and when trust is low the relationship is positive (i.e. promotive voice increases relationship conflict). As shown in Table 4, the interaction between Time 1 promotive voice and Time 1 team trust, predicting Time 1 relationship conflict, was non-significant (upper part of Model 2b: $B = -.02, p = .40$). The interaction between Time 2 promotive voice and Time 2 team trust, predicting Time 2 relationship conflict, was non-significant (middle part of Model 2b: $B = -.03, p = .18$). However, Time 1 promotive voice and Time 1 team trust negatively interacted to predict Time 2 relationship conflict (lower part of Model 2b: $B = -.06, p = .02$). As shown in Figure 3, simple slopes capturing the relationship between promotive voice and relationship conflict were positive and significant when team trust was low (simple slope $B = .04, p = .003$), but not when team trust was high (simple slope $B = .01, p = .69$). As shown in Appendix E, I did not replicate these interactions with the team-referent measure of promotive voice. Though there was one significant interaction, I theorized that there would be a negative relationship between promotive voice and relationship conflict when trust was high and I did not find this effect. These results do not support Hypothesis 4.

Hypothesis 5 predicts that there is a negative relationship between team relationship conflict and team performance. As shown in Table 3, there was a non-significant correlation between both Time 1 relationship conflict ($r = -.20, p = .07$)

and Time 2 relationship conflict ($r = -.15$, $p = .16$) and team performance. Thus, I did not find support for Hypothesis 5.

Hypothesis 6 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between prohibitive voice and team performance. Hypothesis 7 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between promotive voice and team performance. As shown in Table 5, after controlling for Time 1 voice measures, Time 1 trust, and the interactions among trust and voice, there was a non-significant relationship between Time 1 relationship conflict and team performance (upper part of Model 3c: $B = -9.50$, $p = .06$). As shown in Table 5, after controlling for Time 2 voice measures, Time 2 trust, and the interactions among trust and voice, there was a non-significant relationship between Time 2 relationship conflict and team performance (lower part of Model 3c: $B = .62$, $p = .88$). As shown in Appendix E, I found a similar pattern of non-significant effects with the team-referent measures of both promotive and prohibitive voice. Thus, there would be no mediation and I did not find support for Hypothesis 6 or 7.

Alternative Tests

Relationship conflict predicting voice. I wanted to test alternative models in an attempt to rule out several alternative explanations. For example, the literature regarding how voice and relationship conflict are related is mixed. On the one hand, MacKenzie et al. (2011) theorized that voice could trigger relationship conflict. On the other hand, De Dreu and Van Vianen (2001) and Farh and Chen (2014) theorized that relationship conflict would reduce voice. Empirically speaking, the limitations of

these studies are that MacKenzie et al. (2011) did not measure relationship conflict, and were unable to test this aspect of their theory, and neither De Dreu and Van Vianen (2001) nor Farh and Chen (2014) measured both voice and relationship conflict at separate times and thus could not test for these alternative effects. Since I have both voice and relationship conflict measures at Time 1 and 2, I am able to test these competing models.

As shown in Table 6, when controlling for Time 1 relationship conflict, neither Time 1 prohibitive voice (Model 2a: $B = .19, p = .12$) or Time 1 promotive voice (Model 2b: $B = .11, p = .40$) predicted Time 2 relationship conflict. As shown in Table 7, when controlling for Time 1 prohibitive voice, Time 1 relationship conflict did not predict Time 2 prohibitive voice (Model 2a: $B = -.03, p = .69$); however, even when controlling for Time 1 promotive voice, Time 1 relationship conflict was negatively related to Time 2 promotive voice (Model 2b: $B = -.27, p < .001$). Taken together, these results suggest that prohibitive voice and relationship conflict are fairly independent – i.e. early levels of prohibitive voice don't trigger subsequent relationship conflict and vice-a-versa. However, it does appear that early relationship conflict can decrease subsequent promotive voice, which is in line with the findings of Farh & Chen (2014).

Does trust moderate the relationship between task and relationship conflict.

Prior work has shown that team trust is a consistent moderator of the relationship between task conflict and relationship conflict, such that when trust is low the relationship is stronger and when trust is high the relationship is weaker (Choi & Cho, 2011; Peterson & Behfar, 2003; Simons & Peterson, 2000). I wanted to see if I was

able to replicate this effect. As shown in Table 8, the interaction between task conflict and team trust, predicting relationship conflict, was significant (upper part of Model 2: $B = -.41, p = .001$, for Time 1 measures, lower part of Model 2: $B = -.35, p = .002$, for Time 2 measures). As shown in Figures 4a and 4b, simple slopes capturing the relationship between task conflict and relationship conflict were positive and significant when team trust was low (simple slope $B = .54, p < .001$ and $B = .66, p < .001$, for Time 1 and Time 2 measures of task conflict and team trust, respectively), and less positive when team trust was high (simple slope $B = .21, p = .003$ and $B = .34, p < .001$, for Time 1 and Time 2 measures of task conflict and team trust, respectively). This is an interesting finding since, even though task conflict and voice were shown to be empirically distinct constructs (i.e. based on CFA results and non-significant or negative correlations between constructs), team trust appeared to operate in a similar manner for both constructs such that when trust was low promotive voice, prohibitive voice, and task conflict all increased relationship conflict.

Alternative outcomes. In addition to looking at relationship conflict as an outcome of voice, I explored the effects of voice on team monitoring to see if I could replicate the findings from Li et al. (2017). As shown in Table 9, there was a positive relationship between Time 1 prohibitive voice and Time 1 team monitoring (upper part of Model 1a: $B = .05, p = .04$) and Time 2 prohibitive voice and Time 2 team monitoring (lower part of Model 1a: $B = .04, p = .01$); there was also a positive relationship between Time 1 promotive voice and Time 1 team monitoring (upper part of Model 1b: $B = .03, p < .001$) and Time 2 promotive voice and Time 2 team

monitoring (lower part of Model 1b: $B = .03, p = .001$). These results replicate one of the findings from Li et al. (2017) – i.e. the positive relationship between prohibitive voice and team monitoring. However, Li et al. (2017) found a non-significant relationship between promotive voice and team monitoring, and thus I found an effect opposite of theirs.

I also looked at whether or not promotive and prohibitive voice triggered team negative affect. Though I do not model a mechanism linking promotive and prohibitive voice to relationship conflict, given that I theorize that voice can trigger negative emotional reactions (reflected in threat perceptions and a prevention regulatory focus), I wanted to assess whether voice had this effect. As shown in Table 10, Time 1 prohibitive voice (upper part of Model 1a: $B = -.01, p = .52$) and Time 1 promotive voice (upper part of Model 1b: $B = -.01, p = .14$) did not predict Time 1 team negative affect. Time 2 prohibitive voice (lower part of Model 1a: $B = .00, p = .91$) and Time 2 promotive voice (lower part of Model 1b: $B = .00, p = .71$) did not predict Time 2 team negative affect. Trust did not moderate the relationship between prohibitive or promotive voice and team negative affect in either Time 1 or Time 2. Thus, opposite of what I predicted, it does not appear that either form of voice triggers negative affect.

Curvilinear effect. Given that MacKenzie et al. (2011) found that voice had a curvilinear effect on team performance, and they theorized (though did not test) that this effect was mediated by relationship conflict, I wanted to see if I was able to replicate these findings. I looked at the curvilinear effect of both Time 1 and 2 promotive and prohibitive voice, using both the behavioral-coded and team-referent

measures, predicting both Time 1 and 2 team relationship conflict as well as team performance. The only curvilinear effect that was significant was the effect of Time 2 promotive voice (behavioral-coding) on team performance ($B = -.18, p = .001$). Though this replicates the findings from MacKenzie et al. (2011), it is not very robust given that I did not find the same effect with team-referent measures of voice or at other times. Additionally, it is interesting that I was able to replicate this effect but found no curvilinear effects on relationship conflict; this suggests that if the effect is occurring, it is not mediated by relationship conflict. See Appendix F for tables outlining these results.

Voice distribution as a moderator. As noted above, Sherf et al. (2018) found that voice centralization harmed team performance when it occurred around members who were more socially dominant and less reflective. Though I did not assess the social dominance and reflexive nature of individual members, given that I collected individual-level ratings of voice, I was able to explore if the distribution of voice in teams had a similar effect as Sherf et al. (2018) found. I conducted this analysis by seeing if the standard deviation of peer-rated voice in a team moderated the effects of voice on both relationship conflict and team performance. However, as outlined in Appendix F, in no instances did I find significant interactions for this effect. These results suggest that voice distribution on its own is not a moderator of voice effects.

Relationship conflict as a moderator. Chen, Sharma, Edinger, Shapiro, and Farh (2011) found that relationship conflict could actually operate as a moderator of team inputs on team outcomes. In my context, relationship conflict would act as an indicator of dysfunction within the team and would prevent a team from accurately

assessing, and thus incorporating and acting upon, the suggestions inherent in voice. Thus, it is possible that voice would only have a positive effect on team performance when relationship conflict is low and I wanted to explore if I would find this effect with my data. However, as shown in Appendix F, in no instances did I find relationship conflict moderating the effect of voice on team performance.

Study 1 Discussion

Study 1 allowed me to test my model in a controlled setting while measuring voice multiple ways (i.e. behavioral codings, team-referent ratings, and individual team member ratings). Despite (and potentially because of) that setting, for the most part, I did not find support my hypotheses. For example, I find did not find cases of either promotive or prohibitive voice increasing relationship conflict. In fact, using the team-referent measures, it would appear that promotive voice reduces relationship conflict. However, given the issues of common method bias associated with these measures of voice, the behavioral-coded measures are a more robust test of these relationships; and with those measures, there were consistent null effects between voice and relationship conflict. Ultimately though, these effects may not be surprising given that I also did not find any instances where voice triggered negative affect – which I theorized would be a precursor to relationship conflict.

As for trust acting as a team resource and playing an important moderating role, I found mixed effects. With the behavioral codings, I found that when trust was low, prohibitive voice were more strongly related to relationship conflict, which supports Hypothesis 3. However, I could not replicate this effect using the team-referent measures of voice.

I found it interesting (and surprising) that relationship conflict was not associated with team performance, especially given the strong meta-analytical evidence regarding this effect (De Dreu & Weingart, 2003; De Wit et al., 2012; O'Neill et al., 2013). One reason for the lack of an effect could be the simulation itself – i.e. it is intentionally designed to be engaging and enjoyable for participants, making it less likely for relationship conflict to emerge. Though I intentionally offered (and emphasized) the prize money (e.g., over \$1000 in total cash prizes for high performers), this may not have been enough of an incentive to get participants to care about their own performance and the performance of their fellow team members. I saw anecdotal evidence for this while acting as the RA for 33 teams and coding all 87 of the videos; for example, even though I did see instances where participants were experiencing relationship conflict (i.e. one participant saying, “Damn it guys, you need to pay attention. We wasted a day. You shouldn’t have done that”), for the most part, participants enjoyed the simulation (i.e. laughing, joking, and saying how much fun it was). Though the means and standard deviations, in both times, were fairly low for relationship conflict, they are similar to results found in other studies where team-referent relationship conflict was assessed on a five-point scale (cf., Amason and Sapienza, 1997: $M = 1.93$, $SD = .72$; Curşeu and Schruijer, 2010: $M = 1.67$, $SD = .41$; Choi and Cho, 2011: $M = 1.67$, $SD = 0.39$; Jehn and Bendersky, 2003: $M = 1.31$, $SD = .57$). I discuss this issue in more depth in the limitations section of the General Discuss below.

Given these issues, there are a number of limitations with Study 1. Thus, I designed Study 2 as an attempt to address some of these problems and to see if I

would find a similar or different pattern of results. Study 2 samples from teams that are together for longer (i.e. six weeks as opposed to two hours) and operate in more high stakes conditions (i.e. performance in the team determines one's ability to be eligible for certain promotion). Additionally, voice measures come from both team members as well as the de facto team leader, and also at two time points, to replicate the strength of having a time-lagged study with multiple sources of data.

Chapter 5: Study 2

Overview

Given the limitations of Study 1, I wanted to collect additional data to both replicate and further validate my findings. I collaborated with the United States Air Force (USAF) Squadron Officer School (SOS), a six-week Professional Military Education program, to collect field data from teams of officers going through the course. Participants included USAF Captains, 1st Lieutenants selected for Captain, and Department of the Air Force Civilian equivalents. SOS is based at Maxwell AFB in Birmingham, Alabama. Participants in the program are assigned² to 14 person teams (referred to as “flights”) and there are 49 flights during each six-week class. Participants work closely with their team over the course of the program (i.e. completing daily coursework together, completing mandatory physical training together, etc.) and complete numerous team activities during the program (such as solving logic problems under time pressure, completing obstacle courses, completing team class assignments, etc.). Performance on these various team activities determines the flights overall performance (see Appendix G for an outline of each core category of team tasks and the points associated with each). Each flight is assigned an instructor who provides facilitation for that flight during the program.

² Team assignments are done such that there is a fairly equal distribution across teams in terms of race and gender (i.e. so one team is not composed of only white males) and job distribution (i.e. so there are not all pilots in one flight). Other than this, there are no systematic means of team assignment.

At both the mid-point (week 3, Time 1) and at the end of the program (week 6, Time 2), SOS administers a mandatory survey to all students and instructors. In the survey, instructors and students have to provide individual-level ratings of all students in their flight (i.e. round-robin assessments), and these evaluations are used as part of a student's final grade (these ratings are not used to determine total flight points). My survey was included at the end of this assessment, with emphasis that providing responses was voluntary, not part of the mandatory survey, and that the data would not be used as part of the student's grades; to further comply with IRB requirements, participants were told that all SOS data would be scrubbed of any personally identifying information (i.e. names, ranks, demographic information, etc.) and, thus, I received anonymized data (i.e., no individual identifiable data; but I was able to link data to each flight, via a common flight identifier). At Time 1, the student sample consisted of 563 students in 49 teams, an 84% individual-level response rate and a 100% team-level response rate; across teams, responses were provided from 5 to 14 members. At Time 2, the student sample consisted of 527 students in 48 teams, a 79% individual-level response rate and a 98% team-level response rate; across teams, responses were provided from 5 to 14 members. At Time 1, I received responses from 30 instructors, a 61% response rate. At Time 2, I received responses from 24 instructors, a 49% response rate. There were only 16 teams that I had "matched" instructor data on from Time 1 to Time 2. Given the low response rates from instructors, I do not report hypothesis testing with this data in the results section below and instead include these results in Appendix H.

Methods

Measures. To accommodate requests from administrators, only single-item measures were used. I collected data for four constructs (promotive voice, prohibitive voice, trust, and relationship conflict) and SOS shared with me the total flight points. Table 11 provides the ICC(1), ICC(2), ANOVA test statistics, and r_{wg} values for the student-rated measures. Table 12 provides the means, standard deviations, and correlations for each of the measures (note: I include instructor-rated measures in Table 12 as a reference).

Team voice. Team promotive and prohibitive voice were operationalized using a single-item, team-referent measure adapted from the Liang et al. (2012) measure. A similar single-item measure was used in Study 1, though with an individual-referent as opposed to a team-referent. As shown in Appendix D, in Study 1, this single-item, peer-rating measure, when aggregated to the team level, was correlated with the behavioral-coded and team-referent measures of voice. These results help validate the use of the single-item measure in Study 2.

The promotive voice item was, “Members of this flight proactively provide constructive suggestions that help the flight reach its goals (e.g. suggest better strategies for the flight to accomplish its tasks).” The prohibitive voice item was, “Members of this flight proactively point out actual or potential problems involving the flight (e.g. identify processes that could be harmful to accomplishing tasks).” Individual responses were aggregated to the team-level. As illustrated in Table 11, even though the r_{wg} values were fairly strong, suggesting that there was consistent agreement around the focal construct within the team, the ICC(1) and ICC(2) values

were low, especially in Time 1, suggesting that most flights had similar mean ratings. Through conversations with my points-of-contact at SOS, this is likely driven by two factors: 1) all flights are equally encouraged to speak up as part of working together (i.e. a see something, say something policy); and 2) the ratings given through the survey system are used to determine a student's grades in the program and thus a consensus can arise where students do not want to provide low ratings for others in their flights and thus harm their grade; and even though students were aware that the measures I collected were not part of that evaluation system, the mentality is still present when they complete these ratings of their flights. Ultimately, the low ICC values, coupled with reasonable r_{wg} values and the low standard deviation values, suggested limited variance on voice measure, rated by students.

Team trust. For the team-referent measure of trust, I used a single-item, team-referent measure adapted from Colquitt et al. (2011). The team trust item was, "Members of this flight trust each other (e.g., are confident you can depend on each other when performing tasks)." Individual responses were aggregated to the team-level to create the team-referent measures of team trust. As shown in Table 11, members exhibited a sufficient level of inter-member reliability and agreement, justifying aggregation to the team level.

Team relationship conflict. For the team-referent measure of relationship conflict, I used a single-item, team-referent measure adapted from Jehn and Mannix (1999). The relationship conflict item was, "Members of this flight experience interpersonal conflicts (e.g., get upset with each other when working together)." Individual responses were aggregated to the team-level to create the team-referent

measures of relationship conflict. Though the r_{wg} values are low, this could be driven by the fact these are fairly large teams (i.e. 14 members per team) and relationship conflicts might not be as visible as behaviors like voice, meaning that there would be less agreement on whether or not these behaviors are occurring. However, as shown in Table 11, members exhibited a generally sufficient level of inter-member agreement, justifying aggregation to the team level.

Team performance. For team performance I used the archival data provided by SOS for each team's "total flight points," which is the metric that SOS uses to determine each flights standing during the program. Flight points are the sum of a teams performance in seven categories, with maximum point values assigned to each category: 1) academic performance / professional conduct (20 points that all teams start with); 2) three Team Leadership Problems (TLP; 18 points total); 3) Team Challenge (7 points); 4) two Project X obstacle courses (18 points total); 5) Commandant's Challenge (21 points); 6) Airpower and Doctrine War Gaming (10 points); 7) Field Leadership Exercise (8 points). By the Time 1 survey, participants had completed two TLPs, one Project X, and the Team Challenge; additionally, teams started with 20 points in the academic performance category. Thus, a team could earn a maximum of 48 points by Time 1; Time 1 team performance scores ranged from 21 to 40. By the Time 2 survey, participants had completed all team activities and Time 2 performance was a cumulative total of all points earned during the program (i.e. it included Time 1 scores). Thus, a team could earn a maximum of 102 points by Time 2; Time 2 team performance scores ranged from 35.2 to 73. Appendix G provides an overview of each category and a more detailed description of the core team activities.

Analytic Approach. I tested each hypothesis, using OLS regression, with only the student-rated measures (given the low response rates from instructors). I report the results in the tables such that Time 1 measures predicting Time 1 outcomes are shown in the upper part of the table, Time 2 measures predicting Time 2 outcomes are shown in the middle part of the table, and Time 1 measures predicting Time 2 outcomes are shown in the lower part of the table.

Results

Hypothesis 1 predicts that there is a positive relationship between prohibitive voice and relationship conflict. As shown in Table 13, there was a negative relationship between Time 1 prohibitive voice and Time 1 relationship conflict (upper part of Model 1a: $B = -1.04, p < .001$), Time 2 prohibitive voice and Time 2 relationship conflict (middle part of Model 1a: $B = -.94, p = .001$), and Time 1 prohibitive voice and Time 2 relationship conflict (lower part of Model 1a: $B = -1.03, p = .002$). These results do not support Hypothesis 1.

After looking at the effects of prohibitive voice, I explored the effects of promotive voice on relationship conflict, which was posed as a research question. As shown in Table 13, there was a negative relationship between Time 1 promotive voice and Time 1 relationship conflict (upper part of Model 1b: $B = -1.02, p < .001$), Time 2 promotive voice and Time 2 relationship conflict (middle part of Model 1b: $B = -.93, p = .001$), and Time 1 promotive voice and Time 2 relationship conflict (lower part of Model 1b: $B = -.79, p = .01$). These results suggest that promotive voice reduces relationship conflict.

Hypothesis 2 predicts that there is a stronger, more positive relationship between prohibitive voice and relationship conflict than between promotive voice and relationship conflict. As shown in Table 13, Time 1 prohibitive voice (upper part Model 1c: $B = -.64, p = .02$) and Time 1 promotive voice (upper part Model 1c: $B = -.68, p = .01$) were similarly related to Time 1 relationship conflict; Time 2 prohibitive voice (middle part Model 1c: $B = -.54, p = .15$) and Time 2 promotive voice (middle part Model 1c: $B = -.54, p = .15$) were not related to Time 2 relationship conflict; Time 1 prohibitive voice (lower part Model 1c: $B = -.83, p = .03$) was related more strongly, but negatively, to Time 2 relationship conflict than Time 1 promotive voice (middle part Model 1c: $B = -.35, p = .34$). These results do not support Hypothesis 2.

Hypothesis 3 predicts that team trust negatively moderates the positive relationship between prohibitive voice and relationship conflict. As shown in Table 13, the interaction between Time 1 prohibitive voice and Time 1 team trust, predicting Time 1 relationship conflict, was non-significant (upper part of model 2a: $B = -.45, p = .40$); the interaction between Time 2 prohibitive voice and Time 2 team trust, predicting Time 2 relationship conflict, was non-significant (middle part of model 2a: $B = .18, p = .82$); the interaction between Time 1 prohibitive voice and Time 1 team trust, predicting Time 2 relationship conflict, was non-significant (lower part of model 2a: $B = .01, p = .99$). These results do not support Hypothesis 3.

Hypothesis 4 predicts that team trust moderates the relationship between promotive voice and relationship conflict, such that when trust is high the relationship is negative and when trust is low the relationship is positive. As shown in Table 13, the interaction between Time 1 promotive voice and Time 1 team trust, predicting

Time 1 relationship conflict, was non-significant (upper part of Model 2b: $B = -.37, p = .47$). The interaction between Time 2 promotive voice and Time 2 team trust, predicting Time 2 relationship conflict, was non-significant (middle part of Model 2b: $B = -.53, p = .48$). The interaction between Time 1 promotive voice and Time 1 team trust, predicting Time 2 relationship conflict, was non-significant (lower part of Model 2b: $B = -.39, p = .58$). Thus, Hypothesis 4 was not supported.

Hypothesis 5 predicts that there is a negative relationship between relationship conflict and team performance. As shown in Table 12, Time 1 relationship conflict ($r = -.39, p = .006$) was negatively related to Time 1 team performance. However, Time 2 relationship conflict ($r = -.12, p = .40$) was not related to Time 2 team performance. These results provide weak support for Hypothesis 5.

Hypothesis 6 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between prohibitive voice and team performance. Hypothesis 7 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between promotive voice and team performance. As shown in Table 14, after controlling for Time 1 voice measures, Time 1 trust, and the interactions among trust and voice, there was a non-significant relationship between Time 1 relationship conflict and Time 2 team performance (upper part of Model 3c: $B = -3.12, p = .41$); after controlling for Time 2 voice measures, Time 2 trust, and the interactions among trust and voice, there was a non-significant relationship between Time 2 relationship conflict and Time 2 team performance (lower part of Model 3c: $B = -.59, p = .85$). There would be no mediation and I did not find support for Hypothesis 6 or 7.

Alternative Tests

Similar to the alternative and supplemental analyses conducted for Study 1, I also wanted to assess both the potential for a curvilinear effect and whether relationship conflict would act as a moderator of voice effects. Appendix I provides the tables for this analysis.

Curvilinear effect. I looked at the curvilinear effect of both Time 1 and 2 promotive and prohibitive voice, predicting both Time 1 and 2 team relationship conflict as well as team performance. As shown in Appendix I, I found no significant curvilinear effects. These results do not replicate the findings from MacKenzie et al. (2011)

Relationship conflict as a moderator. I explored whether relationship conflict would moderate the effects of both forms of voice on team performance. As shown in Appendix I, I found no significant interactions for this effect.

Study 2 Discussion

Study 2 allowed me to test my theoretical model in a high-stakes field setting, with more stable teams, and collect my measures through both student and instructor ratings; however, because of the low response rates from instructors, I was unable to capitalize on this strength and only student-rated measures were used. Despite the strengths of this study, I was unable to find support for any of my hypotheses (though this could be driven by some of the limitations of the study). For example, in no instances did I find cases of either promotive or prohibitive voice increasing relationship conflict. In fact, using the student-rated measures of voice, it would appear that both forms of voice reduced relationship conflict. However, as shown in

Appendix H, I was not able to replicate these results with the instructor-rated measures; though given the smaller sample size, results with the instructor-rated measures should be interpreted with caution.

One possible reason for the lack of replication is that, curiously, neither the promotive or prohibitive student and instructor ratings of voice, at both times, were significantly correlated. Though Burris et al. (2013) also found that there can be a discrepancy between leader and subordinate ratings of voice, one possible reason for these findings in my setting is that students don't want to rate their own team poorly on voice whereas instructors actually receive training from SOS on how to be more objective when providing these assessments. Additionally, instructors have more of a baseline to operate off – i.e. having worked with previous flights. Thus, even a team that is objectively low on voice, for the members of that team going through SOS for the first time, it may seem as if they are engaging in high levels of voice for that context, whereas the instructor, from having taught multiple flights, is able to more accurately see that this team is engaging in low level of voice. There is some support for this notion when comparing the standard deviations from student-ratings compared to instructor-ratings – i.e. some instructor-ratings had standard deviations three times that of student ratings. However, if this were the case, I would have expected to see a similar pattern of non-significant correlations with student-vs.-instructor ratings of trust and relationship conflict, which was not the case.

The lack of correlation between student- and instructor-rated voice could also be driven by validity issues with the sample or measures; for example, inspecting the instructor-rated measures, there appears to be cases of careless responses (i.e. at Time

1, in 10% of cases, there were “4”s given across each response). In talking with my points-of-contact at SOS, it was suggested that these careless responses could be driven by both survey and general fatigue that instructors may have been experiencing. For the cohort I sampled from, SOS had recently undergone a significant restructuring of the program and instructors were being asked to adapt to numerous changes; additionally, when completing my survey, instructors would have just completed individual ratings for each student in their flight, which are part of the mandatory survey, and my survey questions would have been the last set of questions they saw. Given these issues, I would advise caution when interpreting the instructor-rated results. Additionally, given what was occurring at SOS when I collected the data, I would like to collect data from additional cohorts; my assumption is that once instructors have better adapted more to these program changes, I may see better response rates with fewer careless responses.

Related to these different operationalizations of voice, student-ratings of promotive voice were positively correlated with team performance at both Time 1 and Time 2. These findings are in line with prior work that found a positive correlation between undifferentiated team voice and team performance (Chamberlin et al., 2017). However, student-rated prohibitive voice, and both instructor-ratings of voice, were unrelated to team performance. These findings suggest that the student-rated measures of voice might be more valid, since they replicated prior findings; it also suggests that the context of this setting might not have been appropriate to assess prohibitive voice, since prior work has found that prohibitive voice is positively

correlated with team productivity performance and team safety performance (Li et al., 2017).

As for trust acting as a team resource and playing an important moderating role, across both student- and instructor-rated of measures, I did not find support for this effect. As with Study 1, at least with student-rated measures, trust was positively correlated with promotive and prohibitive voice and negatively correlated with relationship conflict. Thus, teams with higher levels of trust engaged in more voice and experienced less relationship conflict; thus, there may be few instances of teams with low trust but who engaged in high levels of voice. However, given the low levels of variance in terms of team trust (i.e. at Time 1, the lowest value for team trust was 3.44, which is still above the mid-point range of the scale, and in 95% of cases, team trust was rated at a 4 or above), it is difficult to assess if this were the case.

Though both student and instructor ratings of relationship conflict were negatively correlated with team performance at Time 1, replicating prior meta-analytic finding (De Wit et al., 2012; O'Neill et al., 2013), the correlations at Time 2 were non-significant and relationship conflict did not mediate the moderated effects of either form of voice on team performance at either time and with either student or instructor ratings. Given that student-ratings of promotive voice were positively related to team performance, this suggests that other important team processes are mediating this effect (an issue I address in the general discussion below).

Chapter 6: General Discussion

Overview

Though there has been a growing amount of research examining the antecedents of team voice, as Morrison (2011) noted in her review of the voice literature, there was (and, to an extent, still is) a lack of literature exploring the outcomes of team voice. Though work has begun to emerge addressing these gaps, this work has primarily focused on the positive outcomes of voice (see MacKenzie et al., 2011 for an exception). However, as outlined above, the voice literature has also alluded to (though yet to adequately theorize or empirically address) the idea that speaking up can also be disruptive and potentially harmful for the team. Given these suggestions, and gaps, I set out to explore if promotive and prohibitive voice could harm team performance, by triggering relationship conflict, and if team trust would buffer (amplify) those effects. However, across two studies, I largely did not find support for my arguments or hypotheses. As elaborated on in more detail below, there are two possible reasons for these findings: (1) the theoretical model was incorrect, which suggests that voice as a potentially threatening behavior in team environments may need to be re-conceptualized; or (2) I did not correctly test this model, which suggests that future studies require different operationalizations of voice or team settings where voice is more likely to trigger relationship conflict.

In terms of specific findings across studies, Hypothesis 1 predicted that there would be a positive relationship between prohibitive voice and relationship conflict. However, across both studies, I found either non-significant or negative relationships

– suggesting that prohibitive voice may actually *decrease* relationship conflict. One reason that prohibitive voice could be negatively associated with relationship conflict is that it brings potential problems to the attention of the team and allows them to address those issues before they become more severe and create the conditions for relationship conflict to emerge. Even though prohibitive voice is potentially disruptive, as a pro-social and proactive behavior that is intended to benefit the team, it may not be interpreted as threatening or disruptive – and thus will not trigger relationship conflict. These suggestions would be in line with the theorizing by Liang et al. (2012), who proposed that prohibitive voice could (in the right context) have positive effects on team performance, and empirical findings by Li et al. (2017), who found that prohibitive voice was positively correlated with team productivity performance and team safety performance. That said, I was not able to consistently replicate a negative relationship between prohibitive voice and relationship conflict; thus, these results should be interpreted cautiously and future studies are required to better understand if prohibitive voice has this effect.

In looking at the effects of promotive voice on relationship conflict, I framed this as a research question since, given my theory, it is possible that promotive voice could either increase or decrease relationship conflict. As with prohibitive voice, I found either non-significant or negative relationships – suggesting promotive voice decreases relationship conflict. Similar to prohibitive voice, it is possible that the pro-social and proactive nature of this behavior, combined with the suggestions for improvements that accompany promotive voice, minimized the likelihood of this behavior triggering threat and thus relationship conflict. However, again, I was not

able to consistently replicate a negative relationship between promotive voice and relationship conflict; thus, these results should also be interpreted cautiously and future studies are required to better understand the relationship between these constructs.

In addition to looking at these main effects, I also wanted to explore a team-level factor that could act as an important resource for the team and either buffer or amplify my predicted effects. In Study 1, I found that when team trust was low, both prohibitive and promotive voice were associated with increases in relationship conflict, which was in line with my theory and supported Hypothesis 3. However, I only found this effect when using the behavioral-coded measures of voice and not with the team-referent measures; additionally, I was unable to replicate this effect in Study 2. One potential limitation of testing this hypothesis, across studies, is that I had limited variance for the team trust measure. Though in both Study 1 and Study 2 there were moderate ICC values (and all models produced significant ANOVA results), team trust was never rated below 3.0 (the mid-point of the scale) and the majority of scores were rated at a 4 or above. Given the limited amount of variance in team trust, the significant interactions found in Study 1 should be interpreted with caution and I would encourage future studies to sample from teams that will have more variance in terms of team trust.

Finally, I also found it surprising that in both Study 1 and Study 2 (with the Time 2 measures), there was a non-significant correlation between relationship conflict and team performance, given the meta-analytical support for this relationship (De Dreu & Weingart, 2003; de Wit et al., 2012; O'Neill et al., 2013). This could be

driven by the fact that there was limited variance with regard to relationship conflict in Study 1 and 2 (i.e. most teams rated themselves low on this measure); however, across both studies the means and standard deviations for relationship conflict were similar to results found in other studies (cf., Amason and Sapienza, 1997; Curşeu and Schruijer, 2010; Choi and Cho, 2011; Jehn and Bendersky, 2003). Therefore, there were similarities between the descriptive statistics I found and those found in other studies where there was a negative correlation between relationship conflict and team performance. This suggests that the contexts that I sampled from may not have been ideal, in that teams may have been able to achieve high levels of task performance irrespective of interpersonal disagreements; put differently, it is possible that with the Everest Simulation, and the SOS team activities, even if team members were upset with each other, they were still able to work together to achieve high levels of team performance.

Despite not finding support for most of my hypotheses, there are still several important contributions that I make with this dissertation. First, building on threat rigidity theory (Staw et al., 1981) and regulatory focus theory (Higgins, 1997; 1998), I outlined theoretical arguments for why promotive and prohibitive voice could trigger team relationship conflict. This is important because even though prior work has hinted at and alluded to the fact that voice can potentially disrupt team functioning, a more detailed theoretical account for how these effects can occur was missing from the literature. This gap is important because the ideas of costs associated with voice are usually looked at from the perspective of risk to the voicer, as opposed to risks to the team (e.g., Burris, 2012; Cortina & Magley, 2003; Deter &

Burris, 2007; Howell et al., 2015; Seibert et al., 2001). However, based on my theory, voice can be threatening to the team as a whole because it can trigger relationship conflict, since it can cause team members to feel threatened or to be put into a prevention mindset. However, a limitation of my dissertation is that I did not measure either threat or regulatory foci. Thus, I do not have the ability to test if voice actually did trigger these outcomes and the only conclusions that I can draw from my data is that voice does not appear to trigger relationship conflict. Though I did assess negative affect, at best this was proxy for threat perceptions and a prevention mindset; additionally, neither promotive or prohibitive voice was related to negative affect, which suggests, at least peripherally, that voice might not trigger perceptions of threat or prevention mindsets.

Though researchers should not draw conclusions from non-significant findings, and future work is needed to continue exploring whether or not voice can disrupt team functioning, if researchers do not find these effects it is possible that voice needs to be re-examined and re-conceptualized. Put differently, if voice theory suggests that this behavior can be disruptive and potentially harm interpersonal relationships within the team, yet empirical studies do not find support for these arguments, it is possibly that the ways in which voice is theorized about needs to be re-evaluated. However, before researchers move to make these types of re-assessments, future work is needed – especially, experimentally manipulating both forms of voice, assessing threat perceptions and regulatory foci, and looking at alternative mediators and moderators.

Second, in terms of theoretical contributions, I embraced recent work that suggests voice can be distinguished based on its content (cf., Liang et al., 2012; Maynes & Podsakoff, 2014; Morrison, 2011) to look at the comparative effects of promotive and prohibitive voice. However, opposite my hypothesis, I did not find that promotive voice was a stronger negative predictor of relationship conflict than prohibitive voice; when compared simultaneously, it appears that both forms of voice had a similar, non-significant effect on relationship conflict. However, it is possible that these effects (or lack thereof) were driven by the fact that the types of voice behaviors that I assessed did not actually tap into the potentially threatening aspects of voice. For example, even some of the behavioral-coded instances of prohibitive voice in Study 1 still entailed helpful suggestions for fellow members (i.e. “I think it is going to be too dangerous to keep going, I don't think we should;” and “Maybe you should stay behind a day so you don't get sick.”) Additionally, in Study 2, the stem for the prohibitive voice item contained the word “proactive”, which may have made participants automatically associate it with more positive and beneficial behaviors – versus those that would be more threatening and thus trigger team conflict. Though I embraced the distinction between promotive and prohibitive voice suggested by Liang et al. (2012), Maynes and Podsakoff (2014) advocated for an even more nuanced conceptualization of voice that includes destructive voice (defined as “the voluntary expression of hurtful, critical, or debasing opinions regarding work policies, practices, procedures, etc.” p. 91). Thus, it is possible that the voice effects I theorized would only emerge when team members engage in destructive voice.

Third, I built on work in both the team trust and team conflict literatures to

outline why team trust should moderate the relationship between both promotive and prohibitive voice and relationship conflict. Given that voice shares important conceptual similarities with task conflict, and prior work has shown that team trust moderates the relationship between task conflict and relationship conflict, I hypothesized that I would find a similar effect. Even though in Study 1 I was able to replicate the effect of team trust moderating the relationship between task conflict and relationship conflict, across studies, I did not find any consistent support for the hypothesis that trust would have the same moderating effect for the link between voice and relationship conflict. Again, though researchers should be careful about drawing conclusions from non-significant findings, these results, along with that fact that correlation results showed that task conflict and voice not related or related negatively, this suggests that voice and task conflict are distinct constructs. Additionally, it appears that team trust was not a consistent moderator of voice effects. These findings suggest that there are other important team qualities that could act as an important boundary condition of voice effects (an issue I discuss more below).

Practical Implications

Despite not finding consistent support for several of my hypotheses, my dissertation still offers several practical insights for managers and employees. First, though the voice literature has provided support for the assertion that voice behaviors do lead to improved performance in teams, units, and the organization as a whole, as noted above, the literature has also suggested that voice can be disruptive and potentially harmful to the team. Despite these allusions, I did not find a consistent

pattern of these effects with my data. In fact, it appears that even a behavior like prohibitive voice, which is inherently more challenging and thus disruptive, either had a negative or non-significant effect on relationship conflict. Thus, employees should be encouraged to speak up about a wide range of issues, including those that offer creative solutions to team issues as well as those that point out problems. These findings can help reassure managers that encouraging behaviors like prohibitive voice may not trigger outcomes like relationship conflict. Thus, managers could implement the practice of having one or a few team members take on the role of “devils advocate”, and task certain individuals with taking on the role of pointing out and identifying the possible mistakes the team is making without worrying about negative team outcomes like anger, frustration, and resentment. Put differently, managers easily could hold regular meetings aimed at fostering the promotion of new ideas and suggestions for improvement to existing policies and procedures or to encourage team members to speak up about problems that they see without the worry of those suggestions harming team functioning.

Limitations

As with any study, there are limitations that must be acknowledged. While in Study 1 I did use multiple operationalizations of voice, aside from the behavioral codings, this data all came from the same source. Additionally, though the lag in time in Study 1 helps address some of the issues with common method bias (Podsakoff et al., 2003), the fact that this was only a two-hour study limits the strength of that lag on reducing this bias. On a related note, both studies are limited in the causal inferences that can be drawn from the results, since I did not manipulate either voice

or trust. Experimental replications of the findings presented here would increase the ability to make causal inferences. However, the temporal separation of data collections across all studies was an effort to minimize common method bias.

Though my sample size in Study 1 was similar to those found in other team voice studies, since I had a smaller sample size in Study 2, this might have resulted in lower power than necessary to find the hypothesized effects (especially for the instructor-rated data, where I was only able to pair 16 teams across Time 1 and 2). It would be desirable to have a larger number of teams and thus I will continue to work with Maxwell to increase my sample size (i.e. collecting data from at least two more classes to bring the sample size closer to 150 teams, which will bring me close to the sample sizes in Li et al., 2017 and MacKenzie et al., 2011, which had sample sizes of 105 and 150 teams, respectively). Though in Study 2 I was able to collect data from 100 percent of teams (for student-rated data at Time 1), and I was able to collect data at two time points, I was only able to collect single-item measures. However, taken together, both studies produced a similar pattern of results, and similar correlations between my core constructs, and thus these two studies together help provide a replication and validation to the non-significant findings across studies.

As noted above, another limitation of both studies pertains to the validity of my measures – i.e. low ICCs and poor sample variance. In Study 1, as shown in Appendix Table 1, both the ICCs and the standard deviations I found for my voice measures are similar to those found in other team-voice papers. That said, the descriptive statistics for all survey-based measures still suggests that there was limited variance. In Study 2, this issue was further exacerbated in that the ICCs,

especially for voice, were lower than what I found in Study 1 and there was also less variance. One solution to this, for future lab studies, would be to experimentally manipulate both voice as well as trust (or any moderator). In terms of continuing to collect data from Maxwell, ideally I would be able to collect multi-item measures and within a separate survey from the mandatory survey; however, through previous pilot studies, the response rates for separate surveys was very low (i.e. at most, 8% team-level response rates) and administrators made explicit requests for single-item measures. Taken together, these issues suggest a more appropriate setting may be required to study the phenomena of interest – i.e. teams where there would be greater variance in terms of voice and trust. Additionally, as noted above, prior meta-analytical work has shown that task conflict (which shares conceptual similarities to voice) is more likely to trigger relationship conflict in high stakes environments when teams are working on more uncertain and complex tasks than for low stakes teams working on routine tasks (De Dreu & Weingart, 2003). Thus, it is possible that my theorized effects would only emerge in settings where teams are working on more high stakes projects, working around tight and continuous deadlines, and have more task and outcome interdependence.

Future Directions

The findings and limitations of these studies present a number of future research directions. First, given the suggestions made in the literature to date, future research should continue to explore if and when voice can actually undermine team performance. However, I would suggest that an experimental approach be taken wherein both promotive and prohibitive voice, as well as trust (or any moderator), are

experimentally manipulated. This would help to address issues around the strong correlations between promotive voice, prohibitive voice, and trust. One alternative explanation, noted above, is that teams with higher trust simply voice more – and thus there are potentially few cases where there are teams with low trust but high voice. An experimental study would allow researchers to see if there was a difference in the levels of voice at high and low levels of trust and more rigorously test the hypotheses I propose above. Additionally, manipulating both promotive and prohibitive voice at high and low levels would allow researchers to better isolate that comparative and relative effects of these different forms of voice on an outcome like relationship conflict.

If researchers manipulated prohibitive voice but still found that it negatively related to relationship conflict, this would further strengthen the argument that voice may need to be re-conceptualized. As noted throughout this dissertation, my hypotheses were based on suggestions in the literature that voice behaviors, especially prohibitive voice because of its content, can be disruptive and potentially cause other teams members to feel angry or upset. Moreover, one of the core ways that voice behaviors have been conceptualized, since Van Dyne and LePine (1998) introduced the initial measure of voice commonly used today, is that it is a challenging behavior. However, if future studies are unable to find that voice behaviors can actually undermine team performance, then it is possible that the ways in which voice is theorized about potentially needs to be re-evaluated and re-examined.

However, before researchers move to begin re-conceptualize voice, and questioning if it actually does have the capacity to undermine team performance,

future research is needed. For example, in addition to continuing to explore if voice can harm team performance because it triggers relationship conflict, and if this effect is moderated by trust, I would also encourage future research around alternative mediators and moderators. As outlined in the introduction, a core assumption regarding what is required for voice to have its effect on the team is that it first needs to be heard but then, critically, the team needs to be able to act on it. Though work has begun to emerge that demonstrates when voice is more likely to be heard (c.f., Baker et al., 2016; Howell et al., 2015; Li et al., 2014; Whiting et al., 2012), missing from the literature is a closer examination of when the team is more (versus less) able to actually handle incorporating the suggestions inherently contained within voice. It is possible that team trust does not operate as “team resource” to handle incorporating voice. It is also possible that voice does not undermine team functioning because it triggers a negative team state, like relationship conflict, but that it disrupts or prevents a positive team state from emerging when a team lacks the necessary resources. For example, future research could benefit from exploring if team voice improves team performance because it increases team coordination, but only when team learning is high; when team learning is low, teams may lack the ability to “acquire, share, refine, or combine task-relevant knowledge through interaction with one another” (Argote, Gruenfeld, & Naquin, 1999; p. 370) and thus they do not possess the ability to actually reap the benefits of voice. Regardless of the specific construct, researchers should consider alternative mediators and moderators to better understand the potential downsides of team voice.

Additionally, I would encourage future studies that continue to explore these issues but sample from more traditional work teams, especially those that operate under more high stakes environments where voice is more likely to be potentially disruptive. Study 1 was a two-hour lab study composed of undergraduate students and despite the large financial incentives, which were designed to increase how much participants cared about their performance, it is possible that students simply were not invested enough in their teams performance and thus voice behaviors never actually triggered threat or a prevention mindset. Though my field data better matches the realities of what ongoing teams deal with, it was only a six week program and it is possible that team members decided that they were all just going to “get along with one another” to make it through the program. Thus, it is possible that I would see a different set of results depending on the type of team I sample (i.e. maybe ongoing projects teams are more likely to experience threat and a prevention mindset, following voice, when “more is on the line”). In line with these suggestions, I would also encourage future work to explore these issues while sampling from a diverse global population to address issues around how the cultural makeup and / or the national origin of the team could produce a different set of results. For example, it is possible that the power distance of the country plays an important moderating role around when voice behaviors do (or do not) potentially trigger relationship conflict; in countries where power distance is high, it could be that challenging behaviors like prohibitive voice are especially likely to be viewed as disruptive and threatening and thus are more likely to trigger relationship conflict.

Conclusion

Team voice is clearly an important set of employee behaviors that can improve both team and organizational functioning. Yet, the literature has suggested (though yet to adequately explore) that these behaviors can potentially harm or undermine team performance. In this dissertation, my aim was to try and explore this issue and address those gaps. Though my theory suggests when and why voice can harm team functioning, my empirical findings do not support the idea that either promotive or prohibitive voice can be disruptive. Though I did not find consistent empirical support for my hypotheses, given the suggestions made in the literature, this is still a possibility and I encourage future studies to continue investigating the potential negative outcomes of team voice. My hope is that this dissertation provides the foundation for voice scholars to continue theorizing about the potential negative consequences of voice.

Appendices

Appendix A: Study 1 Script

Hi everyone, I'm Bradford. Thanks for being here today.

Today, you are going to be participating in the Everest simulation, an award-winning team decision making simulation developed by researchers at the Harvard Business School. This simulation is used all around the world by undergraduate, MBA, and executive education programs to focus on critical issues pertaining to team decision making and team functioning. Some of the people in the room are going to be on your team and you are going to work together to summit Mt. Everest.

When you get to your assigned room you will log into the simulation and you will first see a series of tutorial pages. These pages are designed to walk you through the user interface of the simulation and they provide detailed instructions on how to use the simulation. You will want to pay close attention to this tutorial because even though your RA will remain in the room during the simulation, we will be unable to answer any clarifying questions once you have begun. Paying attention to learn your roles and the rules of the simulation are critical.

You have two goals in the simulation – achieve the highest team score possible and achieve the highest individual role score possible. Everyone will be assigned a unique role in your team and you earn points by achieving goals associated with your role.

Each role has its own particular set of knowledge, skills, and abilities, as well as strengths and weaknesses associated with it. Success in the simulation depends on everyone fully understanding their unique role, so make sure to familiarize yourself with your role. Additionally, some roles have unique responsibilities within the simulation. Make sure to pay close attention to whether or not you have any of these unique responsibilities. So, again, performance is based on the number of individual and team goals achieved, and those goals are outlined in the simulation when you read about your role.

You will also want to pay close attention to the goals associated with your role because there are \$1000 in cash prizes for performing well and winning. Specifically, the top 5 performing teams will receive \$500 dollars and the top 5 performers for each role will also receive \$500. Prizes will be distributed to individuals and teams once the study has concluded at the end of the week. And remember, this is a team simulation, so the actions, behaviors, and suggestions of your fellow team members will have a direct impact on you winning part of that \$1000 prize.

Before beginning, I want to go over several important points.

First, you will be taking several surveys during the simulation. The simulation itself has a survey embedded in it at the mid-point and a survey at the end. These surveys are very important because they provide the data that will be used to populate the debrief information that your instructor and I will go over with you next week in class. The two surveys built into the simulation are very short and should only take a few minutes.

After you complete these Everest surveys, you will also complete two surveys using a separate web browser. Make sure to inform your RA when you have completed the surveys built into the simulation so that we can pull up the other surveys on your computer. These surveys are being used to help me complete my dissertation, and thus this data is incredibly important. Please take your time when completing these surveys, and answer the survey questions thoughtfully and truthfully. Note that some of the pages have timers on them to encourage everyone to spend an adequate amount of time moving through it and hopefully generate better data. When completing all of these surveys, please refrain from talking to your fellow team members about the simulation, even if you finish before them. If several team members finish before someone, and begin talking about the simulation and their next decisions, others in your team may miss out on critical information while trying to pay attention to finishing the survey.

Second, make sure to let me know each time you decide to move forward in the simulation by a day, as we need to track and record your progress.

Third, you have until [insert time here; for example, if the session started at 8 am they have until 10 am; if the session started at 10 am, they have until noon] to complete the simulation. You can move at whatever pace is feels normal for your team, but keep this stop time in mind. When you complete the simulation, please do not close it out. We need to record how you did on and this information will be used during the in-class debrief next week.

As a quick recap of what I just talked about:

- 1) after you sign in, go through the tutorial and remember to pay close attention to your role.
- 2) your goal in the simulation is to win by getting the highest team score and individual score.
- 3) there are \$1000 in cash prizes, \$500 for the best performing teams and \$500 for the best performing individuals
- 4) you will take several surveys as you move through the simulation and let us know when they pop up onto your screen in the simulation.

5) let us know as you move forward each day

6) finally, I ask that you don't discuss the simulation with others students in class until next week. Its important everyone comes in with "fresh eyes" – and also, discussing the simulation might give others a leg up and jeopardize your winning the prizes.

So, to make sure everyone understand a few key points: 1) What is the total value of the cash prize? (They should say \$1000); 2) How do you win? (They should say by accomplishing individual and team goals)? 3) Is your success in the simulation dependent on the actions and suggestions of your team members? (They should say yes).]

Appendix B: Study 1 Measures

(Team Promotive Voice – Time 1 and 2)

Please think about your team, in general, and rate how strongly you agree or disagree with the statements below.

NOTE: These statements specifically refer to how much your team, as a whole, engaged in the expression of ideas or suggestions for improving the overall functioning of your team and NOT just how much members of your team talk to each other in general.

Members of my team... (1 = strongly disagree; 5 = strongly agree)

1. Proactively develop and make suggestions for issues that may influence the team
2. Proactively suggest new methods which are beneficial to the team
3. Raise suggestions to improve the teams working procedure
4. Proactively voice out constructive suggestions that help the team reach its goals
5. Make constructive suggestions to improve the teams operation

(Team Prohibitive Voice – Time 1 and 2)

Please think about your team, in general, and rate how strongly you agree or disagree with the statements below.

NOTE: These statements specifically refer to how much your team, as a whole, engaged in the expression of concerns about team practices, incidents, or team member behaviors that are harmful to the team accomplishing its tasks and NOT just how much members of your team talk to each other in general.

Members of my team... (1 = strongly disagree; 5 = strongly agree)

1. Advise each other against undesirable behaviors that would hamper performance
2. Speak up honestly with problems that might cause serious losses to the team, even when/though dissenting opinions exist
3. Dare to voice out opinions on things that might affect efficiency in the team, even if that would embarrass others
4. Dare to point out problems when they appear in the team, even if that would hamper relationships with other colleagues
5. Proactively point out coordination problems

(Team Trust – Time 1 and 2)

Please think about your team, in general, and rate how strongly you agree or disagree with the following statements (in the context of working together in the simulation): (1 = strongly disagree; 5 = strongly agree)

1. In general, I trust the members of my team
2. I am confident that members of my team will do the right thing
3. I am confident that I can depend on members of my team when performing tasks
4. It bothers me to think that I am vulnerable to the actions of members of this team*
5. It bothers me when I have to rely on members of my team*

*Note that these two reverse coded items produced poor measurement fit statistics when included in the CFA models and thus were not used for the team-aggregated measure of trust.

(Team Conflict – Time 1 and 2)

Please think about your team, in general, and rate how strongly you agree or disagree with the following statements:

Members of my team... (1 = strongly disagree; 5 = strongly agree)

(Relationship Conflict)

1. Experience relationship tension while working together
2. Get upset while working together
3. Experience interpersonal conflict

(Task Conflict)

4. Experience conflict of ideas
5. Have disagreements about the task we are working on
6. Have conflicting opinions about the task at hand

(Peer-Rated Promotive Voice – Time 1 and 2)

Please think about each person in your team, including yourself, and rate how strongly you agree or disagree with the statements below.

NOTE: These statements specifically refer to how much each individual member of your team engaged in the expression of ideas or suggestions for improving the overall functioning of your team and NOT just how much they talked in general.

This person proactively provides constructive suggestions that help the team reach its goals. For example, s/he suggests better strategies for the team to accomplish its tasks. (1 = strongly disagree; 5 = strongly agree)

[6 team roles inserted here]

(Individual Prohibitive Voice – Time 1 and 2)

Please think about each person in your team, including yourself, and rate how strongly you agree or disagree with the following statement:

NOTE: These statements specifically refer to how much each individual member of your team engaged in the expression of concerns about team practices, incidents, or other team member behaviors that are harmful to the team accomplishing its tasks and NOT just how much they talked in general.

This person points out actual or potential problems in the team. For example, s/he points out potential problems involving strategies employed by the team that could be harmful.

[6 team roles inserted here]

(Individual Trust – Time 1 and 2)

Please think about each person in your team and rate how strongly you agree or disagree with the following statement (please skip rating yourself for this question):

In general, I trust this person. For example, I am confident that s/he will do the right thing and I can depend on him/her in the simulation.) (1 = strongly disagree; 5 = strongly agree)

[6 team roles inserted here]

(Individual Negative Affect – Time 1 and 2)

Below are number of words that describe different feelings and emotions. Indicate to what extent you feel this way while working with your team on the simulation. Use the following scale to record your answers. (1 = Very Slightly; 5 = Extremely)

1. Upset
2. Hostile
3. Irritable
4. Frustrated
5. Nervous*

Note: When the nervous item was included in measurement models, it produced poor fit statistics and thus was dropped from analysis.

(Team Monitoring – Time 1 and 2)

Please think about your team, in general, and rate how strongly you agree or disagree with the following statements: (1 = strongly disagree; 5 = strongly agree)

1. Members of this team check whether everyone meets their obligations
2. Members of this team watch whether everyone completes their work
3. Members of this team keep close track of whether everyone performs as expected

Appendix C: Coding Schema

Promotive Voice

The expression of new ideas or suggestions for improving the overall functioning of the team.

Prohibitive Voice

The expressions of concern about work practices, incidents, team member behaviors, or possible team actions that are or will be harmful to the team.

Key operationalization: suggesting that the team (or a team member) try something different to maximize points (i.e. promotive voice) or fix an error / avoid something risky (i.e. prohibitive voice). These suggestions or ‘orders’ should be outside of one’s own task and not in response to a direct request for help or input. It can be directed at a single individual or the whole team.

How to measure: Anytime there is a new suggestion that meets the criteria of either promotive or prohibitive voice, count it respectively. If somebody gives a lot of suggestions in one breath (e.g., we should summit today, we should change our plan to get to the top) count it as two. If through the course of a conversation there are several suggestions (e.g., the previous two acts of voice are given with space in between them), count them as more than one.

Additional details on what constitutes voice:

- Specific, actionable recommendation for other member to perform.
- Possible to be framed as a question, but it still requires enough specificity to infer direct course of action (e.g., “Are you sure you want to summit today? The weather might get worse”; “What is everyone thinking? I think we should share our goals and what people think to make a plan”).
- If guidance or suggestions are given that also overlap with reminders of rules and procedures, then this is voice (e.g., “No, you can’t give out medicine to two people on the same day, so you should give it to whoever needs it most today”)
- If several statements are made regarding the same issue, parse based on ‘clumping’. For example, if one player is voicing a single specific behavior repetitively, it may be that they repeat it in a relatively short period of time, or that they bring it up, let time pass, then bring it up again later. If they bring it up again later, with time in between or someone else talking, it counts twice.
- If there is one behavioral episode but the *content* of the voice shifts (e.g., we should summit today as a team, and I think we need to do a better job sharing our unique information), or the *receiver* of the voice shifts (e.g., in one vocal stream, the leader tells one person to do one thing, and another person to do another thing), count these as separate voice behaviors. The exception to the latter (regarding receivers) is that if one person addresses multiple people about a single action, it’s just counted as one behavior because it is directed at the team.
- Corrections to others’ prior actions should count (it is likely prohibitive voice if it is trying to fix an error or mistake someone made).

- If an individual speaks for the team (e.g., “we should do...”), it counts if it involves others’ moves
- If there’s a larger multi-person conversation, anybody who chimes in on the issue should be counted if their behavior otherwise would count as voice.
- General strategic suggestions count if it implies course of action (e.g., “let’s try and all get to camp 4 and then use our rest day there”).
- Suggestions that apply to a connected string of actions over time count as voice.

Additional details on what is NOT voice:

- General questions are not voice (“Should I give him water?”; “What is everyone thinking?”).
- Responses to questions/direct requests do not count.
- General instructions / advice / orders about how to use the simulation itself is not voice (i.e. “Look at your goals, scroll to the bottom, check the weather, etc.”)
- General sharing of information about what someone is personally thinking or sharing information about what they might do on the next turn is not voice (“I want to keep going” “I don't think I should ascend”). It is not voice if it is not directed at the team as a whole or another individual.
- For the most part, when they are discussing the oxygen canisters, it isn’t voice. They are instead discussing task work and solving a puzzle. Unless there is a specific strategy that someone suggestions or challenges. So “Give him 2 canisters, give me 3 canisters”, this is not voice. But you still have to pay close attention because usually throughout this discuss there can be a few forms of actual voice that deal more with strategy as a whole.
- Just pointing things out, without a suggestion to follow it is not voice. “You need to stay here to get your points, right?. You need to make it to camp 4, right?. You had this right. Etc.”
- Encouraging people to do a health check is not voice, unless it relates to a larger strategy.

OVERALL REMINDERS:

Do not let the consequent define the behavior (behavior can’t be defined by its results). Use results to clarify what the behavior was, but don’t use it as criteria!

Prohibitive Voice Examples

- “Guys, you need to pay attention. We wasted a day. You shouldn’t have done that”
- “I think it is going to be too dangerous to keep going, I don't think we should.”
- “I wouldn’t do it (give medical supplies) – there is no point in giving supplies out that we don't know they need”
- “You should stop now if you are already weak”
- “I don't think you should give that, she doesn't need anything else”
- “If it gets colder, we shouldn’t risk it”
- “You have to be careful...”
- “Maybe you should stay behind a day”
- “I don't think we should be giving it right now”

“I told you, we didn't allocate these right. We need to take more time with these decisions.”
“You should do it because you aren't at risk for frostbite” “But I shouldn't do it because it could change like that”
“I need to avoid frostbite, so I think we may not want to go on today.”
“I'm worried if we give you the inhaler, and you die, ...”
“With your history of asthma, I don't think you should”
“Everyone else needs to check themselves, if we get sick now it's going to be harder to keep going”
“Who ever we think is going to get altitude sickness, we should give them water”

Promotive Voice Examples

“Look, I think we can figure out how to maximize points, but we all need to share our goals”
“Give him the inhaler because we will need him at camp 4”
“We should probably use all of our supplies if this is our last stop”
“I don't see a reason to stay at basecamp”
“I think we need everyone to stay together”
“You guys need to get moving if we want to maximize our points”
“You need to do whatever is going to give you the most points”
“I would say stay because you have no oxygen and we will get the most points as a whole if you stay”
“I am in favor of hiking and think we should go for it”
“I would give it to the environmentalist because it's going to help us all if he is healthy”
“We could split up”
“As a team, I think we should keep going.”
“We could also have you two rest for a day here but we will keep going...”
“We could all try and make it to camp 4, and then take our rest day”
“I think we should have the leader and marathoner keep going, but the photographer and the physician can stay at camp 2.”
“We have unlimited water, so I think we should just be giving out on every round.”

Appendix D: Validity and Reliability Comparisons of Study 1 Voice

In order to establish the validity of the voice measures used in Study 1, I provide an outline of tables and analysis not reported in the main body of the dissertation. For example, as shown in Appendix Table 1, the inter-member reliability and agreement results for Study 1 were similar to those of other team-level voice studies, which supports the validity of the team-referent measures; as also shown in Appendix Table 1, the means and standard deviations I found for my voice measures in Study 1 were also similar to prior studies. As shown in Appendix Table 2, for the single-item, peer-rated measures of promotive and prohibitive voice, members exhibited a sufficient level of member-level inter-rater reliability and agreement, justifying aggregation to the focal member level for both Time 1 and 2; team-level peer-rated voice measures were created by averaging the peer-rated voice scores for each of the five (or six) members. As shown in Appendix Table 3, there were high correlations between the behavioral-coded, team-referent, and peer-rated measures of voice, further validating all measures. Additionally, the correlation between the peer-rated, single-item measure and the behavioral-coded and team-referent measures supports its validity and provides support for the use of a single-item measure in Study 2. For example, the single-item measure correlated strongly with both the behavioral-coded measures of voice (Time 1 promotive voice: $r = .36, p = .001$; Time 1 prohibitive voice: $r = .49, p < .001$; Time 2 promotive voice: $r = .33, p = .002$; Time 2 prohibitive voice: $r = .29, p = .007$) and the team-referent measures of voice (Time 1 promotive voice: $r = .73, p < .001$; Time 1 prohibitive voice: $r = .63, p < .001$; Time 2 promotive voice: $r = .74, p < .001$; Time 2 prohibitive voice: $r = .52, p < .001$).

Appendix E: Study 1 Team-Referent Measure Results

As noted above, though I collected three measures of voice (a behavioral-coded, a team-referent, and a peer-rated measure), the main analysis provided in the results section for Study 1 only used the behavioral-coded measures of promotive and prohibitive voice. This was done to ease a review of the results section; also, the behavioral-coded measures of voice are less subject to common method bias. Thus, the behavioral-coded measures were chosen over the other two options. However, for the sake of transparency, below I provide the results for the hypothesis testing using the team-referent measure of voice. A very similar pattern of results are found using the peer-rated measures (which is unsurprising given the high correlation between the team-referent and peer-rated measures) and, thus, to reduce the length of the dissertation, only the results for the team-referent measures are provided.

As shown in Appendix Table 4, there was a non-significant relationship between Time 1 prohibitive voice and Time 1 relationship conflict (upper part of Model 1a: $B = -.21, p = .06$), Time 2 prohibitive voice and Time 2 relationship conflict (middle part of Model 1a: $B = -.12, p = .52$), and Time 1 prohibitive voice and Time 2 relationship conflict (lower part of Model 1a: $B = -.01, p = .95$). As shown across Appendix Table 4, Model 1c, when controlling for promotive voice, prohibitive voice was positively associated with relationship conflict – which would suggest that Hypothesis 1 was supported. However, given the negative correlation between the team-referent measure of prohibitive voice and relationship conflict, these results are likely be due to issues of multicollinearity (Chen, 2005); thus, these

results should be interpreted with caution and are likely unreliable. These results do not support Hypothesis 1.

As shown in Appendix Table 4, there was a negative relationship between Time 1 promotive voice and Time 1 relationship conflict (upper part of Model 1b: $B = -.41, p < .001$), Time 2 promotive voice and Time 2 relationship conflict (middle part of Model 1b: $B = -.94, p < .001$), and Time 1 promotive voice and Time 2 relationship conflict (lower part of Model 1b: $B = -.30, p = .05$). As shown across Appendix Table 4, Model 1c, these significant effects held when controlling for prohibitive voice. These results suggest that promotive voice decreases relationship conflict; however, because of the potential for common method bias with the survey-based measures, these results should be interpreted with caution.

Hypothesis 2 predicts that there is a stronger, more positive relationship between prohibitive voice and relationship conflict than between promotive voice and relationship conflict. However, given the issues of multicollinearity noted above, testing this hypothesis with the team-referent measures of both forms of voice was problematic. Thus, the significant effects across Appendix Table 4, Model 1c are likely unreliable.

Hypothesis 3 predicts that team trust negatively moderates the positive relationship between team prohibitive voice and team relationship conflict, such that as team trust weakens the positive relationship between team prohibitive voice and team relationship conflict. As shown in Appendix Table 4, the interaction between Time 1 prohibitive voice and Time 1 team trust, predicting Time 1 relationship conflict, was non-significant (upper part of Model 2a: $B = -.21, p = .33$); the

interactions between Time 2 prohibitive voice and Time 2 team trust, predicting Time 2 relationship conflict, was non-significant (middle part of Model 2a: $B = -.18, p = .53$); the interactions between Time 1 prohibitive voice and Time 1 team trust, predicting Time 2 relationship conflict, was non-significant (middle part of Model 2a: $B = -.29, p = .32$). These results do not support Hypothesis 3.

Hypothesis 4 predicts that team trust moderates the effect between promotive voice and relationship conflict. As shown in Appendix Table 4, the interaction between Time 1 promotive voice and Time 1 team trust, predicting Time 1 relationship conflict, was non-significant (upper part of Model 2b: $B = -.10, p = .66$). The interaction between Time 2 promotive voice and Time 2 team trust, predicting Time 2 relationship conflict, was non-significant (middle part of Model 2b: $B = -.18, p = .53$); the interaction between Time 1 promotive voice and Time 1 team trust, predicting Time 2 relationship conflict, was non-significant (lower part of Model 2b: $B = -.19, p = .54$). These results do not support Hypothesis 4.

Hypothesis 5 predicts that there is a negative relationship between team relationship conflict and team performance. As noted in the main results, there was a non-significant relationship between both Time 1 relationship conflict ($r = -.20, p = .07$) and Time 2 relationship conflict ($r = -.15, p = .16$) and team performance. Thus, I did not find support for Hypothesis 5.

Hypothesis 6 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between team prohibitive voice and team performance and Hypothesis 7 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between team promotive voice

and team performance. As shown in Appendix Table 5, after controlling for both Time 1 voice measures, Time 1 trust, and the interaction among trust and the voice measures, there was a non-significant relationship between Time 1 relationship conflict and team performance (upper part of Model 3c: $B = -3.36, p = .53$). As shown in Appendix Table 5, after controlling for both Time 2 voice measures, Time 2 trust, and the interaction among trust and the voice measures, there was a non-significant relationship between Time 2 relationship conflict and team performance (lower part of Model 3c: $B = 1.17, p = .81$). Thus, there would be no mediation and I did not find support for Hypothesis 6 or 7.

Appendix F: Study 1 Alternative and Supplemental Analysis

Appendix F provides the tables for several alternative and supplemental analyses not reported on in detail in the body of the dissertation. First, as noted in Study 1, I wanted to explore if I could replicate the curvilinear effect that MacKenzie et al. (2011) found in their study. I regressed both relationship conflict and team performance onto the behavioral-coded and team-referent measures of promotive and prohibitive voice, at both Time 1 and 2, and then the squared term for both forms of voice. Appendix Table 6 shows the results for Time 1 measures; Appendix Table 7 shows the results for Time 2 measures. As shown in Appendix Table 7 (Model 2b), the only curvilinear effect that was significant was the effect of Time 2 promotive voice (behavioral-coding) on team performance ($B = -.18, p = .001$). The pattern was similar to what MacKenzie et al. (2001) observed, in that I also found an inverted-U and at low and high levels, promotive voice was associated with lower levels of team performance and at moderate levels promotive voice was associated with higher levels of team performance. However, given that this effect was not replicated in any other models, or with relationship conflict, it only provides limited support for replicating the finding from MacKenzie et al. (2011).

Second, as noted in Study 1, in addition to collecting behavioral-coded and team-referent measures of voice, I also collected single-item, peer-rated measures. One reason for this was to test whether or not voice distribution moderated the effects of voice on relationship conflict. To conduct this analysis, I first calculated the peer-rated measures of promotive and prohibitive voice for each of the five (or six) team members. Then I calculated the standard deviation of voice for each team. Teams

with low standard deviations indicate that there was a more equal distribution of voice behaviors in the team (i.e. all members engaged in similar levels of voice); teams with high standard deviations indicates that there were one or a few members who engaged in higher or lower levels of voice compared to other members as a whole. The upper-half of Appendix Table 8 shows the results for Time 1 measures; the lower-half of Appendix Table 8 shows the results for Time 2 measures. As shown across Appendix Table 8, in no instances did the standard deviation of promotive or prohibitive voice moderate the effects of voice on relationship conflict.

Finally, as argued by Chen et al. (2011), it is possible that relationship conflict can moderate the effects of team inputs on team outcomes. In my context, relationship conflict would act as an indicator of dysfunction within the team and would prevent a team from accurately assessing, and thus incorporating and acting upon, the suggestions inherent in voice. Thus, it is possible that voice would only have a positive effect on team performance when relationship conflict is low. Appendix Table 9a shows the interaction between Time 1 and 2 behavioral-coded measures of promotive and prohibitive voice interacting with Time 1 and 2 measures of relationship conflict (respectively). Appendix Table 9b shows the interaction between Time 1 and 2 team-referent measures of promotive and prohibitive interacting with Time 1 and 2 measures of relationship conflict (respectively). As shown across Appendix Table 9a and 9b, in no instances did relationship conflict moderate the effect of promotive or prohibitive voice on team performance.

Appendix G: Study 2 Team Performance Metrics

Appendix Table 10 provides an outline of each of the categories that determines a team's performance. Below is a more detailed description of the core team tasks.

Description of Core Team Tasks

Team Leadership Problem 1 (Coded Colors) – Week 2 – 6 points maximum

Coded Colors is a one-hour team challenge. Each 14-person team works in separate classrooms. The entire team is given a challenge of having to place a series of colored shapes in a specific order, such that there are no repeating colors and certain required patterns of colors appear in a certain order; at this point, teams are only given verbal instructions and do not have the colored shapes. Teams have 45 minutes to work together to come up with a game plan in terms of how to approach this task. Then, after 45 minutes, the entire time is broken up into four smaller “sub-teams” and given the colored shapes. These sub-teams have to work independently without communicating with other sub-teams to order the colors and shapes in such a way that all four sub-teams have the correct answer. To “pass”, each of the four sub-teams needs to get the correct answer.

Team Leadership Problem 2 (Acquisitions) – Week 3 – 6 points maximum

Acquisitions is a one-hour team challenge that resembles a negotiation task. Each 14-person team works in separate classrooms. Teams are broken up into four smaller “sub-teams” and each sub-team is given a list of priorities that they are trying to negotiate for with the other sub-teams. To “pass”, each of the four sub-teams needs to complete the negotiation in such a way that every team achieves a win-win solution.

Team Leadership Problem 3 (Budget Cuts) – Week 4 – 6 points maximum

Budget Cuts is a one-hour team challenge that resembles a negotiation task and is similar to acquisitions. However, instead of trying to maximize gains, the teams are trying to minimize losses. Every 15 minutes the teams are given new information about budgetary cuts that they need to incorporate into their negotiations with other teams. To “pass”, each of the four sub-teams needs to complete the negotiation in such a way that every team achieves a win-win solution.

Project X Phase 1 – Week 2 – 9 points maximum

Project X is a three-hour obstacle course challenge done outdoors on a large obstacle course. The obstacle course is set up such that there are dividers and individual 14 person teams are unable to see other teams and thus unable to get a “leg up” on strategy. Teams are given 15 minutes to complete various obstacles, such as moving an “injured” soldier over a broken bridge, transporting materials across open pools without getting wet, getting the entire team over a 15 foot slanted wall, etc. To “pass”, teams need to successfully complete an obstacle.

Project X Phase 2 – Week 5 – 6 points maximum

See above. Teams complete Project X twice.

Team Challenge – Week 3 – 7 points maximum

The Team Challenge is the final team challenge. Teams have to complete a five miles run in less than one hour and during the run teams encounter both physical obstacles (such as obstacles that teams need to crawl over or objects teams have to move together) and mental obstacles (such as math and logic problems that the teams have to solve before they can move on). To “pass”, teams have to complete the full course in under an hour.

Appendix H: Study 2 Instructor-Rated Measure Results

As noted above, though I collected instructor-rated measure in Study 2, the main analysis provided in the results section for Study 2 only used the student-rated measures. This was done because the response rates were low from instructors. However, for the sake of transparency, below I provide the results for the hypothesis testing using the instructor-rated measures. I was only able to match 16 teams using the Time 1 and Time 2 instructor-rated data; given this small sample size, I do not report tests with Time 1 measures predicting Time 2 outcomes.

Hypothesis 1 predicts that there is a positive relationship between prohibitive voice and relationship conflict. As shown in Appendix Table 11, with instructor-ratings, there was a non-significant relationship between Time 1 prohibitive voice and Time 1 relationship conflict (upper part of Model 1a: $B = .33, p = .13$) and Time 2 prohibitive voice and Time 2 relationship conflict (lower part of Model 1a: $B = -.07, p = .78$). These results do not support Hypothesis 1.

After looking at the effects of prohibitive voice, I explored the effects of promotive voice on relationship conflict, which was posed as a research question. As shown in Appendix Table 11, with instructor-ratings, there was a non-significant relationship between Time 1 promotive voice and Time 1 relationship conflict (upper part of Model 1a: $B = .15, p = .56$) and Time 2 promotive voice and Time 2 relationship conflict (lower part of Model 1a: $B = -.38, p = .21$). These results would suggest that there is a non-significant relationship between promotive voice and relationship conflict.

Hypothesis 2 predicts that there is a stronger, more positive relationship between prohibitive voice and relationship conflict than between promotive voice and relationship conflict. As shown in Appendix Table 11, with the instructor-ratings, Time 1 prohibitive voice (upper part Model 1c: $B = .42, p = .15$) and Time 1 promotive voice (upper part Model 1c: $B = -.16, p = .62$) were not related to Time 1 relationship conflict; Time 2 prohibitive voice (lower part Model 1c: $B = .13, p = .64$) and Time 2 promotive voice (lower part Model 1c: $B = -.48, p = .20$) were not related to Time 2 relationship conflict. These results do not support Hypothesis 2.

Hypothesis 3 predicts that team trust negatively moderates the positive relationship between prohibitive voice and relationship conflict. As shown in Appendix Table 11, with instructor-ratings, the interaction between Time 1 prohibitive voice and Time 1 team trust, predicting Time 1 relationship conflict, was non-significant (upper part of model 2a: $B = .58, p = .29$); the interaction between Time 2 prohibitive voice and Time 2 team trust, predicting Time 2 relationship conflict, was non-significant (lower part of model 2a: $B = -.14, p = .84$). These results do not support Hypothesis 3.

Hypothesis 4 predicts that team trust moderates the relationship between promotive voice and relationship conflict, such that when trust is high the relationship is negative and when trust is low the relationship is positive. As shown in Appendix Table 11, with instructor-ratings, the interaction between Time 1 promotive voice and Time 1 team trust, predicting Time 1 relationship conflict, was significant (upper part of Model 2b: $B = .94, p = .04$); however, the conditional effects showed that when team trust was high, promotive voice increased relationship conflict ($B = .98, p =$

.03), but when team trust low, there was a non-significant effect ($B = -.55, p = .21$). This effect is opposite what my theory would suggest and given the primary findings across both studies (and in prior literature) that trust reduces relationship conflict, this is likely an artifact of the smaller sample size associated with instructor ratings (i.e. only 30). The interaction between Time 2 promotive voice and Time 2 team trust, predicting Time 2 relationship conflict, was non-significant (middle part of Model 2b: $B = -.30, p = .61$). These results do not support Hypothesis 4.

Hypothesis 5 predicts that there is a negative relationship between relationship conflict and team performance. As noted in the main results for Study 2, Time 1 instructor ratings of relationship conflict were negatively related to Time 1 team performance ($r = -.36, p = .05$). Time 2 instructor ratings of relationship conflict were not related to Time 2 team performance ($r = -.17, p = .43$). These results provide weak support for Hypothesis 5.

Hypothesis 6 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between prohibitive voice and team performance. Hypothesis 7 predicts that team trust moderates the extent to which relationship conflict mediates the relationship between promotive voice and team performance. As shown in Appendix Table 12, with instructor-ratings, after controlling for Time 1 voice measures, Time 1 trust, and the interactions among trust and voice, there was a non-significant relationship between Time 1 relationship conflict and Time 2 team performance (upper part of Model 3c: $B = .56, p = .78$); after controlling for Time 2 voice measures, Time 2 trust, and the interactions among trust and voice, there was a non-significant relationship between Time 2 relationship

conflict and Time 2 team performance (lower part of Model 3c: $B = 1.73, p = .51$).

Thus, there would be no mediation and I did not find support for Hypothesis 6 or 7.

Appendix I: Study 2 Alternative and Supplemental Analysis

Similar to the alternative and supplemental analyses conducted for Study 1, I also wanted to assess both the potential for a curvilinear effect and whether relationship conflict would act as a moderator of voice effects for Study 2. Appendix I provides the tables for this analysis.

For testing the curvilinear effect, I regressed both relationship conflict and team performance onto the student-rated measures of promotive and prohibitive voice, at both Time 1 and 2, and then the squared term for both forms of voice. The upper-half of Appendix Table 13 shows the results for Time 1 measures; the lower-half of Appendix Table 13 shows the results for Time 2 measures. As shown across Appendix Table 13, there were no significant curvilinear effects.

As with Study 1, I also wanted to test if relationship conflict would moderate the effects of voice on team performance. The upper-half of Appendix Table 14 shows the interaction between Time 1 student-rated measures of promotive and prohibitive voice and relationship conflict with Time 1 team performance; the lower-half of Appendix Table 14 shows the interaction between Time 2 student-rated measures of promotive and prohibitive voice and relationship conflict with Time 2 team performance. As shown across Appendix Table 14, in no instances did relationship conflict moderate the effect of promotive or prohibitive voice on team performance.

Tables

Table 1
CFA Results (Study 1)

Model	df	χ^2	$\Delta\chi^2$	RMSEA	CFI	SRMR
Time 1, Individual-level						
Baseline model (factor 1: promotive voice; factor 2: prohibitive voice; factor 3: trust; factor 4: relationship conflict; factor 5: task conflict; factor 6: negative affect; factor 7: monitoring)	278	688.34		.06	.97	.05
Alternative model 1 (Promotive and prohibitive voice correlated to 1.0)	279	856.04	167.70	.07	.96	.05
Alternative model 2 (Relationship and task conflict correlated to 1.0)	279	1102.23	413.89	.08	.95	.06
Alternative model 3 (Promotive voice, prohibitive voice, and trust correlated to 1.0)	281	1436.90	748.56	.09	.93	.06
Alternative model 4 (All factors correlated to 1.0)	299	5308.11	4619.77	.19	.78	.14
Time 2, Individual-level						
Baseline model (factor 1: promotive voice; factor 2: prohibitive voice; factor 3: trust; factor 4: relationship conflict; factor 5: task conflict; factor 6: negative affect; factor 7: monitoring)	278	802.66		.06	.98	.06
Alternative model 1 (Promotive and prohibitive voice correlated to 1.0)	279	1052.85	250.19	.08	.97	.06
Alternative model 2 (Relationship and task conflict correlated to 1.0)	279	1221.73	419.07	.09	.96	.07
Alternative model 3 (Promotive voice, prohibitive voice, and trust correlated to 1.0)	281	1632.71	830.05	.10	.94	.07
Alternative model 4 (All factors correlated to 1.0)	299	6271.39	5468.73	.21	.82	.14

Note: Time 1 $N = 473$; Time 2 $N = 458$.

Table 2
Inter-Member Reliability & Agreement Results (Study 1)

Measure	Time	ICC(1)	ICC(2)	df	F	p-value	r_{wg(i)}
Team Promotive Voice	1	.22	.60	86, 386	2.50	<i>p</i> < .001	.90
Team Prohibitive Voice	1	.18	.54	86, 386	2.19	<i>p</i> < .001	.87
Team Promotive Voice	2	.12	.41	86, 371	1.70	<i>p</i> < .001	.93
Team Prohibitive Voice	2	.10	.36	86, 371	1.55	<i>p</i> = .003	.84
Team Trust	1	.11	.40	86, 386	1.65	<i>p</i> = .001	.84
Team Trust	2	.13	.44	86, 371	1.79	<i>p</i> < .001	.79
Team Relationship Conflict	1	.19	.56	86, 386	2.24	<i>p</i> < .001	.83
Team Relationship Conflict	2	.27	.66	86, 371	2.90	<i>p</i> < .001	.74
Team Task Conflict	1	.21	.59	86, 386	2.44	<i>p</i> < .001	.60
Team Task Conflict	2	.17	.53	86, 371	2.11	<i>p</i> < .001	.48
Team Monitoring	1	.13	.47	86, 386	1.87	<i>p</i> < .001	.70
Team Monitoring	2	.14	.46	86, 371	1.86	<i>p</i> < .001	.76
Team Negative Affect	1	.06	.25	86, 386	1.34	<i>p</i> = .04	.94
Team Negative Affect	2	.12	.41	86, 371	1.70	<i>p</i> < .001	.90

Table 3
Means, Standard Deviations, and Reliabilities (Study 1)

Measure	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. T1 Prohibitive Voice (BC)	2.84	3.04	--												
2. T1 Promotive Voice (BC)	11.05	6.34	.72*	--											
3. T2 Prohibitive Voice (BC)	3.91	3.46	.41*	.41*	--										
4. T2 Promotive Voice (BC)	12.01	5.34	.42*	.56*	.34*	--									
5. T1 Prohibitive Voice (TR)	3.79	0.40	.57*	.40*	.19	.21*	(.88)								
6. T1 Promotive Voice (TR)	4.19	0.42	.52*	.56*	.33*	.43*	.77*	(.94)							
7. T2 Prohibitive Voice (TR)	3.99	0.36	.46*	.35*	.40*	.25*	.60*	.59*	(.86)						
8. T2 Promotive Voice (TR)	4.31	0.34	.34*	.24*	.29*	.32*	.40*	.59*	.64*	(.94)					
9. T1 Trust	4.16	0.39	.29*	.29*	.14	.38*	.55*	.74*	.47*	.67*	(.93)				
10. T2 Trust	4.18	0.45	.24*	.21	.22*	.27*	.36*	.56*	.50*	.84*	.71*	(.95)			
11. T1 Relationship Conflict	1.64	0.41	-.05	-.01	-.11	-.24*	-.20	-.41*	-.16	-.52*	-.46*	-.53*	(.90)		
12. T2 Relationship Conflict	1.84	0.59	.02	.04	-.06	-.02	-.01	-.21	-.07	-.54*	-.43*	-.66*	.66*	(.95)	
13. T1 Negative Affect	1.22	0.22	-.07	-.16	-.10	-.36	-.10	-.41*	-.18	-.48*	-.53*	-.54*	.65*	.55*	(.85)
14. T2 Negative Affect	1.30	0.30	-.04	.01	-.01	-.04	.02	-.18	-.10	-.48*	-.37*	-.64*	.48*	.77*	.59*
15. T1 Task Conflict	2.54	0.63	.31*	.40*	.11	.00	.12	-.04	.05	-.27*	-.28*	-.36*	.65*	.51*	.56*
16. T2 Task Conflict	2.65	0.63	.21*	.27*	.20	.13	.07	-.07	.00	-.35*	-.32*	-.50*	.50*	.75*	.46*
17. T1 Monitoring	3.89	0.51	.31*	.40*	.25*	.29*	.60*	.76*	.44*	.48*	.63*	.54*	-.40*	-.34*	-.43*
18. T2 Monitoring	4.07	0.48	.32*	.36*	.27*	.34*	.51*	.68*	.50*	.64*	.62*	.74*	-.38*	-.45*	-.43*
19. Team Performance	54.4	17.61	.33*	.39*	.39*	.32*	.10	.25*	.24*	.23*	.16	.33*	-.20	-.15	-.22*

Note: *N* = 87 teams; BC = behavioral-coded measures; TR = team-referent measure * *p* < .05.

Table 3 (Continued)
Means, Standard Deviations, and Reliabilities (Study 1)

Measure	M	SD	14	15	16	17	18	19
14. T2 Negative Affect	1.30	0.30	(.86)					
15. T1 Task Conflict	2.54	0.63	.38*	(.93)				
16. T2 Task Conflict	2.65	0.63	.57*	.70*	(.93)			
17. T1 Team Monitoring	3.89	0.51	-.32*	-.11	-.22*	(.91)		
18. T2 Team Monitoring	4.07	0.48	-.41*	-.17	-.35*	.72*	(.93)	
19. Team Performance	54.4	17.61	-.23*	-.01	.03	.09	.25*	--

Table 4
Effects of Prohibitive and Promotive Voice on Relationship Conflict (Study 1)

DV = Time 1 Relationship Conflict																
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3		Model 4a		Model 4b	
Time 1 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	1.66*	.06	1.65*	.09	1.64*	.09	3.27*	.56	3.07*	.88	3.29*	.97	---	---	---	---
T1 Prohibitive Voice	-.01	.02			-.01	.02	.23	.17			.21	.27	---	---	---	---
T1 Promotive Voice			.00	.01	.00	.01			.08	.08	.01	.13	---	---	---	---
T1 Trust							-.40*	.14	-.37	.21	-.42	.24	---	---	---	---
Prohibitive Voice X Trust							-.05	.04			-.05	.06	---	---	---	---
Promotive Voice X Trust									-.02	.02	.00	.03	---	---	---	---
R ²	.00		.00		.00		.23*		.23*		.24*					
ΔR ²							.23*		.23*							
DV = Time 2 Relationship Conflict																
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3		Model 4a		Model 4b	
Time 2 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	1.87*	.10	1.87*	.16	1.88*	.16	4.21*	.74	4.07*	1.10	3.87*	1.15	2.07*	.77	1.43*	1.03
T2 Prohibitive Voice	-.01	.02			-.01	.02	.38*	.18			.24	.21	.36*	.15		
T2 Promotive Voice			.00	.01	.00	.01			.13	.08	.08	.10			.16	.07
T2 Trust							-.60*	.17	-.58*	.27	-.53	.28	-.32*	.16	-.22	.24
Prohibitive Voice X Trust							-.08*	.04			-.05	.05	-.08*	.03		
Promotive Voice X Trust									-.03	.02	-.02	.02			-.03	.02
Time 1 Relationship Con.													.61*	.12	.66*	.11
R ²	.00		.00		.00		.47*		.47*		.48*		.60*		.63*	
ΔR ²							.47*		.47*				.13*		.16*	

Note: *N* = 87 teams; * *p* < .05; DV = dependent variable.

Table 4 (Continued)
Effects of Prohibitive and Promotive Voice on Relationship Conflict (Study 1)
DV = Time 2 Relationship Conflict

Time 1 Measures	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3		Model 4a		Model 4b	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	1.82*	.09	1.79*	.13	1.79*	.13	3.67*	.79	2.15	1.21	1.91	1.33	1.11	.78	-.24	1.08
T1 Prohibitive Voice	.00	.02			.00	.03	.54*	.24			.04	.37	.35	.21		
T1 Promotive Voice			.00	.01	.01	.01			.28*	.11	.31	.18			.22*	.09
T1 Trust							-.47*	.19	-.12	.30	-.05	.33	-.15	.17	.17	.25
Prohibitive Voice X Trust							-.12*	.06			.00	.09	-.08	.05		
Promotive Voice X Trust									-.06*	.03	-.07	.04			-.05*	.02
Time 1 Relationship Con.													.78*	.13	.78*	.13
R ²	.00		.00		.00		.25*		.27*		.28*		.48*		.50*	
ΔR ²							.25*		.27*				.24*		.23*	

Note: *N* = 87 teams; * *p* < .05; DV = dependent variable.

Table 5
Effects of Voice, Promotive Voice, Trust, and Relationship Conflict on Team Performance (Study 1)

Time 1 Measures	Model 1a		Model 1b		Model 1c		Model 2c		Model 3c	
	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	49.02*	2.46	42.44*	3.53	42.99*	3.64	69.18*	26.03	41.55	45.31
T1 Prohibitive Voice	1.90*	.59			.57	.83	.54	.83	-.65	11.89
T1 Promotive Voice			1.08*	.28	.89*	.40	.94*	.40	4.33	5.73
T1 Trust							-2.81	5.31	4.05	10.56
T1 Relationship Conflict							-9.17	4.79	-9.50	4.87
Prohibitive Voice X Trust									.33	2.78
Promotive Voice X Trust									-.82	1.38
R ²	.11*		.15*		.16*		.20*		.20*	
ΔR ²							.04		.04	
Time 2 Measures	Model 1a		Model 1b		Model 1c		Model 2c		Model 3c	
	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	46.67*	2.65	41.78	4.45	39.69	4.31	3.79	26.84	-25.56	43.84
T2 Prohibitive Voice	1.98*	.51			1.62*	.53	1.45*	.53	-10.68	7.68
T2 Promotive Voice			1.05*	.34	.70*	.34	0.53	.35	6.56	3.46
T2 Trust							8.99	5.39	16.07	10.27
T2 Relationship Conflict							.53	3.96	.62	3.98
Prohibitive Voice X Trust									2.69	1.71
Promotive Voice X Trust									-1.38	.81
R ²	.15*		.10*		.19*		.23*		.27*	
ΔR ²							.04		.08	

Note: *N* = 87 teams; * *p* < .05.

Table 6
Effects of Time 1 Prohibitive and Promotive Voice on Time 2 Relationship Conflict (Study 1)

	DV = Time 2				DV = Time 2			
	Relationship Conflict				Relationship Conflict			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	1.87*	.61	-.49	.54	3.07*	.63	-.21	.64
T1 Prohibitive Voice	-.01	.16	.19	.12				
T1 Promotive Voice					-.30*	.15	.11	.13
T1 Relationship Conflict			.97*	.12			.98*	.13
R ²	.00		.45*		.04*		.44*	
ΔR ²			.45*				.40*	

Note: $N = 87$ teams; * $p < .05$; DV = dependent variable.

Table 7
Effects of Time 1 Relationship Conflict on Time 2 Prohibitive and Promotive Voice (Study 1)

	DV = Time 2 Prohibitive				DV = Time 2 Promotive			
	Voice				Voice			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	4.31*	.16	2.00*	.35	5.00*	.13	3.22*	.37
T1 Prohibitive Voice			.54*	.08				
T1 Promotive Voice							.37*	.07
T1 Relationship Conflict	-.13	.09	-.03	.08	-.42*	.08	-.27*	.07
R ²	.02		.37*		.27*		.44*	
ΔR ²			.34*				.17*	

Note: $N = 87$ teams; * $p < .05$; DV = dependent variable.

Table 8
Effects of Task Conflict & Trust on Relationship Conflict (Study 1)

Time Measures	DV = Time 1 Relationship Conflict			
	Model 1		Model 2	
	B	SE	B	SE
Constant	1.99*	.41	-2.32	1.36
T1 Task Conflict	.37*	.05	2.08*	.52
T1 Trust	-.31*	.08	.72*	.32
Task Conflict X Trust			-.41*	.12
R ²	.51*		.56*	
ΔR ²			.06*	
Time 2 Measures	DV = Time 2 Relationship Conflict			
	Model 1		Model 2	
	B	SE	B	SE
Constant	2.50*	.51	-1.63	1.38
T2 Task Conflict	.52*	.07	1.96*	.46
T2 Trust	-.49*	.09	.50	.32
Task Conflict X Trust			-.35*	.11
R ²	.67*		.71*	
ΔR ²			.04*	

Note: $N = 87$ teams; * $p < .05$; DV = dependent variable.

Table 9
Effects of Prohibitive and Promotive Voice on Team Monitoring (Study 1)

Time 1 Measures	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	3.74*	.07	3.53*	.10	3.54*	.10	.11	.59	-.48	.89	-.39	.99
T1 Prohibitive Voice	.05*	.02			.01	.02	.27	.18			.05	.28
T1 Promotive Voice			.03*	.01	.03*	.01			.14	.08	.12	.14
T1 Trust							.89*	.14	1.00*	.22	.98*	.24
Prohibitive Voice X Trust							-.06	.04			-.01	.07
Promotive Voice X Trust									-.03	.02	-.02	.03
R ²	.10*		.16*		.16*		.43*		.45*			
ΔR ²							.33*		.30*			
Time 2 Measures	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	3.92*	.08	3.70*	.12	3.67*	.12	.29	.55	1.09	.82	1.07	.85
T2 Prohibitive Voice	.04*	.02			.03	.02	.17	.13			.15	.16
T2 Promotive Voice			.03*	.01	.03*	.01			-.01	.06	-.05	.07
T2 Trust							.88*	.13	.67*	.20	.68*	.21
Prohibitive Voice X Trust							-.04	.03			-.03	.04
Promotive Voice X Trust									.01	.02	.02	.02
R ²	.07*		.12*		.14*		.56*		.56*		.55*	
ΔR ²							.50*		.45*			

Note: $N = 87$ teams; * $p < .05$.

Table 10
Effects of Prohibitive and Promotive Voice on Team Negative Affect (Study 1)

Time 1 Measures	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	1.23*	.03	1.28*	.05	1.28*	.05	2.38*	.28	2.38*	.45	2.34	.49
T1 Prohibitive Voice	-.01	.01			.01	.01	.05	.09			.07	.14
T1 Promotive Voice			-.01	.01	-.01	.01			.01	.04	.00	.07
T1 Trust							-.29*	.07	-.28*	.11	-.27*	.12
Prohibitive Voice X Trust							-.01	.02			-.01	.03
Promotive Voice X Trust									-.00	.01	.00	.02
R ²	.01		.03		.03		.29*		.28*		.30*	
ΔR ²							.28*		.25*			

Time 2 Measures	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	1.30*	.05	1.33*	.08	1.33*	.08	2.50*	.38	2.64*	.58	2.56	.59
T2 Prohibitive Voice	.00	.01			.00	.01	.19	.09			.17	.11
T2 Promotive Voice			.00	.01	.00	.01			.05	.04	.01	.05
T2 Trust							-.31*	.09	-.34*	.14	-.32*	.15
Prohibitive Voice X Trust							-.04	.02			-.04	.03
Promotive Voice X Trust									-.01	.01	-.00	.01
R ²	.00		.00		.00		.46*		.44*		.46*	
ΔR ²							.46*		.44*			

Note: *N* = 87 teams; * *p* < .05.

Table 11
Inter-Rater Reliability & Agreement Results – Student Ratings (Study 2)

Measure	Time	ICC(1)	ICC(2)	df	<i>F</i>	<i>p</i> -value	<i>r</i> _{wg}
Team Promotive voice	1	.07	.48	48, 514	1.91	<i>p</i> < .000	.82
Team Prohibitive Voice	1	.01	.12	48, 514	1.13	<i>p</i> = .258	.74
Team Trust	1	.13	.63	48, 514	2.72	<i>p</i> < .000	.82
Team Relationship Conflict	1	.12	.61	48, 514	2.54	<i>p</i> < .000	.52
Team Promotive voice	2	.10	.56	47, 479	2.26	<i>p</i> < .000	.81
Team Prohibitive Voice	2	.07	.48	47, 479	1.91	<i>p</i> < .000	.77
Team Trust	2	.18	.70	47, 479	3.36	<i>p</i> < .000	.83
Team Relationship Conflict	2	.14	.65	47, 479	2.85	<i>p</i> < .000	.42

Table 12
Means, Standard Deviations, and Correlations (Study 2)

Measure	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. T1 Prohibitive Voice (SR)	4.22	0.23													
2. T1 Promotive Voice (SR)	4.45	0.24	.56*												
3. T2 Prohibitive Voice (SR)	4.36	0.28	.49*	.63*											
4. T2 Promotive Voice (SR)	4.49	0.28	.43*	.58*	.74*										
5. T1 Prohibitive Voice (IR)	3.93	0.78	-.04	.05	.27	.20									
6. T1 Promotive Voice (IR)	4.07	0.69	.14	.32	.31	.36*	.64*								
7. T2 Prohibitive Voice (IR)	3.96	0.86	.31	.37	.25	.11	.25	.27							
8. T2 Promotive Voice (IR)	4.08	0.65	.50*	.26	.12	.07	-.24	.19	.55*						
9. T1 Trust (SR)	4.41	0.30	.52*	.71*	.49*	.45*	-.19	.19	.27	.30					
10. T2 Trust (SR)	4.50	0.32	.32*	.48*	.62*	.55*	-.01	.16	.34	.22	.64*				
11. T1 Trust (IR)	3.77	0.82	.06	.34	.35	.21	.03	.21	.02	.28	.52*	.61*			
12. T2 Trust (IR)	4.38	0.49	-.20	.21	.21	.28	.21	.20	.35	.17	-.05	.12	.05		
13. T1 Relationship Conflict (SR)	2.25	0.45	-.54*	-.56*	-.56*	-.45*	.22	-.11	-.04	-.38	-.62*	-.46*	-.26	.02	
14. T2 Relationship Conflict (SR)	2.56	0.55	-.44*	-.35*	-.48*	-.48*	.21	-.05	-.08	-.42*	-.53*	-.71*	-.41*	.12	.71*
15. T1 Relationship Conflict (IR)	2.97	0.93	-.11	-.06	.00	-.01	.28	.11	.33	.08	-.39*	-.13	-.19	-.12	.37*
16. T2 Relationship Conflict (IR)	2.88	0.95	.05	-.28	.04	-.17	-.21	-.47	-.06	-.26	-.03	-.14	-.24	-.45*	-.02
17. T1 Team Performance	29.24	4.47	.24	.37*	.10	.32*	-.21	.00	-.11	.30	.38*	.14	.26	.27	-.39*
18. T2 Team Performance	56.65	8.55	.09	.32*	.01	.26	-.21	-.03	-.01	.32	.24	.08	.08	.34	-.24

Note: SR = student ratings; IR = instructor ratings; Time 1 SR $N = 49$ teams; Time 1 IR $N = 30$ teams; Time 2 SR $N = 48$ teams; Time 1 SR $N = 24$ teams; * $p < .05$.

Table 12 (Continued)
Means, Standard Deviations, and Correlations (Study 2)

Measure	M	SD	14	15	16	17	18
15. T1 Relationship Conflict (IR)	2.97	0.93	.36				
16. T2 Relationship Conflict (IR)	2.88	0.95	.04	.44			
17. T1 Team Performance	29.24	4.47	-.31*	-.36*	-.19		
18. T2 Team Performance	47.05	22.80	-.12	-.07	-.17	.73*	

Table 13
Effects of Prohibitive and Promotive Voice on Relationship Conflict (Study 2)

DV = Time 1 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 1 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	6.64*	.99	6.80*	.99	7.99*	1.06	-.30	9.61	.16	9.67	-1.31	10.11
T1 Prohibitive Voice	-1.04*	.24			-.64*	.27	1.38	2.33			-.56	4.02
T1 Promotive Voice			-1.02*	.22	-.68*	.25			1.19	2.24	1.96	3.73
T1 Trust							1.18	2.23	.92	2.21	1.58	2.34
Prohibitive Voice X Trust							-.45	.54			.01	.92
Promotive Voice X Trust									-.37	.51	-.50	.84
R ²	.29*		.31*		.39*		.46*		.42*		.47*	
ΔR ²							.16*		.11*			
DV = Time 2 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 2 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	6.66*	1.11	6.75*	1.14	7.33	1.19	11.99	16.03	-1.81	14.68	2.31	17.75
T2 Prohibitive Voice	-.94*	.25			-.54	.37	-.99	3.78			-3.58	4.92
T2 Promotive Voice			-.93*	.25	-.54	.37			2.15	3.35	4.73	4.63
T2 Trust							-1.94	3.49	1.24	3.28	.31	3.89
Prohibitive Voice X Trust							.18	.82			.81	1.08
Promotive Voice X Trust									-.53	.75	-1.12	1.04
R ²	.23*		.23*		.26*		.50*		.51*		.52*	
ΔR ²							.27*		.28*			
DV = Time 2 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 1 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	6.91*	1.31	6.07*	1.38	7.60*	1.49	8.28	13.35	-.73	13.29	2.49	13.84
T1 Prohibitive Voice	-1.03*	.31			-.83*	.37	-.57	3.23			-6.42	5.49
T1 Promotive Voice			-.79*	.31	-.35	.36			1.81	3.08	7.05	5.09
T1 Trust							-.79	3.10	.64	3.03	.25	3.19
Prohibitive Voice X Trust							.01	.75			1.32	1.26
Promotive Voice X Trust									-.39	.69	-1.52	1.15
R ²	.19*		.13*		.21*		.32*		.28*		.35*	

Note: Time 1 *N* = 49 teams; Time 2 *N* = 48 teams * *p* < .05; DV = dependent variable.

Table 14
Effects of Prohibitive Voice, Promotive Voice, and Relationship Conflict on Time 2 Team Performance (Study 2)

Time 1 Measures	Model 1a		Model 1b		Model 1c		Model 2c		Model 3c	
	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	42.51*	22.44	6.85	21.50	15.39	24.38	39.08	38.39	-40.12	249.54
T1 Prohibitive Voice	3.35	5.31			-4.61	6.11	-6.45	6.61	6.93	99.23
T1 Promotive Voice			11.19*	4.82	13.64*	5.83	11.83	7.44	17.55	92.18
T1 Trust							-.28	6.29	18.23	57.93
T1 Relationship Conflict							-2.96	3.64	-3.12	3.76
Prohibitive Voice X Trust									-3.15	22.72
Promotive Voice X Trust									-1.29	20.87
R ²	.01		.10*		.11		.13		.13	
ΔR ²							.01		.02	

Time 2 Measures	Model 1a		Model 1b		Model 1c		Model 2c		Model 3c	
	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	55.48*	19.62	21.35	19.37	34.49	19.93	43.86	34.32	112.57	365.98
T2 Prohibitive Voice	.24	4.49			-12.33	6.24	-12.76	6.86	82.34	101.99
T2 Promotive Voice			7.84	4.31	16.89*	6.20	16.35*	6.49	-93.62	96.60
T2 Trust							-.45	6.06	-16.79	80.38
T2 Relationship Conflict							-1.20	3.11	-.59	3.18
Prohibitive Voice X Trust									-21.26	22.34
Promotive Voice X Trust									24.72	21.73
R ²	.00		.07		.14*		.15		.17	
ΔR ²							.01		.03	

Note: Time 1 *N* = 49 teams; Time 2 *N* = 48 teams * *p* < .05.

Appendix Table 1
Reliability, Agreement, Mean, & Standard Deviation Results from Prior Team-Level Voice Studies

Study	Aggregation Method	ICC(1)	ICC(2)	r_{wg(j)}	Mean	SD
Erez et al., 2002	Consensus (member-rated)	.05	NA	.76	5.34 ^a	.48
Frazier & Bowler, 2015	Referent-shift (leader-rated)	NA	NA	NA	5.15 ^a	.93
Lam & Mayer, 2014	Consensus (leader-rated)	.15	.35	.81	5.31 ^a	.72
Li et al., 2017 – Promotive voice	Referent-shift (member-rated)	.15	.48	NA	5.41 ^a	.55
Li et al., 2017 – Prohibitive voice	Referent-shift (member-rated)	.17	.51	NA	5.15 ^a	.57
MacKenzie et al., 2011	Referent-shift (leader-rated)	NA	NA	NA	NA	NA
Walumbwa et al., 2012	Referent-shift (member-rated)	.33	.65	.78	3.41 ^b	.55
Tangirala et al., 2015 – Promotive voice	Consensus (leader-rated)	.40	.74	.91	5.26 ^a	.87
Tangirala et al., 2015 – Prohibitive voice	Consensus (leader-rated)	.45	.78	.93	4.49 ^a	.87

Note: ^a 7-point scale; ^b 5-point scale

Appendix Table 2
Inter-Rater Reliability & Agreement Results for Peer-Rated Voice Measures (Study 1)

Measure	Referent	Time	ICC(1)	ICC(2)	df	F	p-value	r_{wg}
Promotive Voice	Leader	1	.25	.57	86, 331	2.34	<i>p</i> < .000	.70
Promotive Voice	Physician	1	.21	.51	86, 329	2.05	<i>p</i> < .000	.71
Promotive Voice	Photographer	1	.24	.56	86, 329	2.29	<i>p</i> < .000	.59
Promotive Voice	Marathoner	1	.26	.59	86, 331	2.44	<i>p</i> < .000	.59
Promotive Voice	Environmentalist	1	.07	.23	86, 329	1.31	<i>p</i> = .040	.56
Promotive Voice	Observer	1	.40	.73	57, 233	3.68	<i>p</i> < .000	.53
Prohibitive Voice	Leader	1	.13	.38	86, 331	1.62	<i>p</i> = .001	.63
Prohibitive Voice	Physician	1	.10	.31	86, 331	1.45	<i>p</i> = .010	.64
Prohibitive Voice	Photographer	1	.20	.50	86, 332	2.01	<i>p</i> < .000	.58
Prohibitive Voice	Marathoner	1	.23	.55	86, 331	2.21	<i>p</i> < .000	.60
Prohibitive Voice	Environmentalist	1	.10	.31	86, 331	1.45	<i>p</i> = .010	.59
Prohibitive Voice	Observer	1	.36	.69	57, 227	3.21	<i>p</i> < .000	.52
Promotive Voice	Leader	2	.24	.56	86, 332	2.66	<i>p</i> < .000	.66
Promotive Voice	Physician	2	.26	.58	86, 332	2.41	<i>p</i> < .000	.77
Promotive Voice	Photographer	2	.24	.55	86, 332	2.26	<i>p</i> < .000	.57
Promotive Voice	Marathoner	2	.19	.48	86, 332	1.91	<i>p</i> < .000	.65
Promotive Voice	Environmentalist	2	.29	.62	86, 332	2.66	<i>p</i> < .000	.69
Promotive Voice	Observer	2	.46	.77	57, 233	4.38	<i>p</i> < .000	.55
Prohibitive Voice	Leader	2	.17	.46	86, 332	1.85	<i>p</i> < .000	.61
Prohibitive Voice	Physician	2	.25	.57	86, 331	2.34	<i>p</i> < .000	.69
Prohibitive Voice	Photographer	2	.21	.52	86, 332	2.06	<i>p</i> < .000	.60
Prohibitive Voice	Marathoner	2	.17	.45	86, 332	1.81	<i>p</i> < .000	.63
Prohibitive Voice	Environmentalist	2	.20	.51	86, 331	2.03	<i>p</i> < .000	.66
Prohibitive Voice	Observer	2	.50	.80	58, 230	5.03	<i>p</i> < .000	.58

Appendix Table 3
Correlations of Behavioral-Coded, Team-Referent, and Peer-Rated Voice Measures

Measures	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. T1 Prohibitive Voice (BC)	2.84	3.04												
2. T1 Prohibitive Voice (TR)	3.79	0.40	.57*											
3. T1 Prohibitive Voice (PR)	3.85	0.44	.49*	.63*										
4. T1 Promotive Voice (BC)	11.05	6.34	.71*	.40*	.45*									
5. T1 Promotive Voice (TR)	4.19	0.42	.52*	.77*	.77*	.56*								
6. T1 Promotive Voice (PR)	3.94	0.38	.41*	.59*	.76*	.36*	.73*							
7. T2 Prohibitive Voice (BC)	3.91	3.46	.41*	.19	.20	.41*	.33*	.15						
8. T2 Prohibitive Voice (TR)	3.99	0.36	.46*	.60*	.49*	.35*	.59*	.47*	.40*					
9. T2 Prohibitive Voice (PR)	4.05	0.42	.32*	.38*	.65*	.26*	.54*	.62*	.29*	.52*				
10. T2 Promotive Voice (BC)	12.01	5.34	.42*	.21*	.31*	.56*	.43*	.33*	.34*	.25*	.33*			
11. T2 Promotive Voice (TR)	4.31	0.34	.34*	.40*	.55*	.24*	.59*	.57*	.29*	.64*	.73*	.32*		
12. T2 Promotive Voice (PR)	4.09	0.42	.27*	.35*	.60*	.21*	.51*	.68*	.28*	.48*	.87*	.33*	.74*	

Note: *N* = 87 teams; BC = behavioral-coded measure; TR = team-referent measure; PR = peer-rated measure

Appendix Table 4
Effects of Team-Referent Prohibitive and Promotive Voice on Relationship Conflict (Study 1)

DV = Time 1 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 1 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	2.43*	.42	3.36*	.40	3.14*	.41	.39	3.25	2.19	3.66	1.95	3.62
T1 Prohibitive Voice	-.21	.11			.30	.15	.90	.86			2.78*	1.43
T1 Promotive Voice			-.41*	.10	-.63*	.15			.21	.87	-2.26	1.46
T1 Trust							.28	.83	.06	.94	.09	.93
Prohibitive Voice X Trust							-.21	.22			-.61	.35
Promotive Voice X Trust									-.10	.22	.45	.35
R ²	.04		.17*		.20*		.22*		.22*		.28*	
ΔR ²							.18*		.05			
DV = Time 2 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 2 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	2.30*	.71	5.86*	.69	5.05*	.66	1.22	4.57	8.46	5.11	4.96	4.93
T2 Prohibitive Voice	-.12	.18			.75*	.18	1.30	1.16			3.22*	1.55
T2 Promotive Voice			-.94*	.16	-1.44*	.19			-.69	1.24	-2.93	1.51
T2 Trust							-.39	1.11	-1.67	1.24	-.09	1.21
Prohibitive Voice X Trust							-.18	.28			-.61	.37
Promotive Voice X Trust									.18	.29	.59	.36
R ²	.00		.29*		.41*		.53*		.44*		.53*	
ΔR ²							.52*		.15*			
DV = Time 2 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 1 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	1.87*	.61	3.07*	.63	2.67*	.64	-.61	4.56	-1.03	5.20	1.31	5.14
T1 Prohibitive Voice	-.01	.16			.55*	.24	1.64	1.18			3.10	2.03
T1 Promotive Voice			-.30*	.15	-.70*	.23			1.08	1.23	-1.81	2.07
T1 Trust							.21	1.13	-.09	1.34	-.24	1.33
Prohibitive Voice X Trust							-.29	.30			-.64	.49
Promotive Voice X Trust									-.19	.31	.42	.50
R ²	.00		.04*		.10*		.27*		.21*		.28*	

Note: *N* = 87 teams; * *p* < .05; DV = dependent variable.

Appendix Table 5
Effects of Team-Referent Prohibitive Voice, Promotive Voice, and Relationship Conflict on Team Performance (Study 1)

Time 1 Measures	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	37.02*	18.28	10.57	18.70	17.46	19.37	121.00	153.96	95.27	170.99	95.48	173.62
T1 Prohibitive Voice	4.59	4.80			-9.36	7.25	-18.47	40.94			-76.45	70.08
T1 Promotive Voice			10.47*	4.44	17.30*	6.90			-3.41	40.49	64.49	70.75
T1 Trust							-15.85	39.19	-19.77	43.85	-19.98	44.69
Prohibitive Voice X Trust							5.04	10.24			16.68	16.98
Promotive Voice X Trust									3.68	10.15	-11.24	17.11
T1 Relationship Conflict							-6.41	5.19	-5.42	5.12	-3.36	5.32
R ²	.01		.06*		.08*		.05		.08*		.10	
ΔR ²							.04		.02			
Time 2 Measures	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	8.15	20.87	1.71	23.85	-5.99	24.93	-81.42	188.67	-61.88	196.79	-71.16	210.69
T2 Prohibitive Voice	11.60*	5.21			7.13	6.77	19.40	48.07			26.24	67.39
T2 Promotive Voice			12.23*	5.52	7.42	7.16			6.59	46.89	-13.53	65.82
T2 Trust							28.57	46.03	33.58	47.46	35.69	51.30
Prohibitive Voice X Trust							-3.88	11.54			-4.57	16.09
Promotive Voice X Trust									-3.24	10.99	.24	15.35
T2 Relationship Conflict							2.15	4.53	3.37	4.15	1.17	4.72
R ²	.06*		.06*		.07*		.12*		.12*		.13	
ΔR ²							.06		.06			

Note: *N* = 87 teams; * *p* < .05.

Appendix Table 6
Curvilinear Effects of Time 1 Behavioral-Coded and Team-Referent Prohibitive and Promotive Voice on Time 1 Relationship Conflict and Team Performance (Study 1)

	DV = Time 1 Relationship Conflict				DV = Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	1.66*	.06	1.68*	.08	49.02*	2.46	47.31*	3.12
T1 Prohibitive Voice (BC)	-.01	.02	-.02	.03	1.89*	.59	2.87*	1.24
T1 Prohibitive Voice (BC) ²			.00	.00			-.06	.07
R ²	.00		.01		.11*		.12*	
ΔR ²			.01				.01	
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	1.66*	.09	1.77*	.16	42.44*	3.53	39.34*	6.37
T1 Promotive Voice (BC)	.00	.01	-.02	.03	1.08*	.28	1.63	.98
T1 Promotive Voice (BC) ²			.00	.00			-.02	.03
R ²	.00		.01		.15*		.16*	
ΔR ²			.01				.01	
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	2.43*	.42	1.18*	1.82	37.02*	18.28	101.17	78.55
T1 Prohibitive Voice (TR)	-.21	.11	.50	1.01	4.59	4.79	-31.63	43.39
T1 Prohibitive Voice (TR) ²			-.10	.14			5.03	5.99
R ²	.04		.05		.01		.02	
ΔR ²			.01				.01	
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	3.36*	.41	1.10	2.29	10.57	18.67	149.33	103.29
T1 Promotive Voice (TR)	-.41*	.10	.72	1.14	10.47*	4.44	-59.18	51.19
T1 Promotive Voice (TR) ²			-.14	.14			8.63	6.32
R ²	.17*		.18*		.06*		.08*	
ΔR ²			.01				.02	

Note: $N = 87$; * $p < .05$; DV = dependent variable; BC = behavioral-coded measure of voice; TR = team-referent measure of voice; ² signifies squared term.

Appendix Table 7
Curvilinear Effects of Time 2 Behavioral-Coded and Team-Referent Prohibitive and Promotive Voice on Time 2 Relationship Conflict and Team Performance (Study 1)

	DV = Time 2 Relationship Conflict				DV = Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	1.87*	.10	1.76*	.13	46.67*	2.65	43.99*	3.68
T2 Prohibitive Voice (BC)	-.01	.02	.05	.05	1.98*	.51	3.38*	1.43
T2 Prohibitive Voice (BC) ²			.00	.00			-.10	.10
R ²	.00		.02		.15*		.16*	
ΔR ²			.02				.01	
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	1.87*	.16	1.99*	.34	41.78*	4.45	14.54	9.23
T2 Promotive Voice (BC)	.00	.01	-.02	.06	1.05*	.34	5.87*	1.49
T2 Promotive Voice (BC) ²			.00	.00			-.18*	.05
R ²	.00		.00		.10*		.21*	
ΔR ²			.00				.10*	
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	2.30*	.71	2.13*	5.43	8.15	20.87	154.39	158.23
T2 Prohibitive Voice (TR)	-.12	.18	-.03	2.77	11.60*	5.21	-63.59	80.82
T2 Prohibitive Voice (TR) ²			-.01	.35			9.59	10.28
R ²	.01		.01		.06*		.07	
ΔR ²			.00				.01	
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	5.86*	.67	4.91	6.65	1.71	23.85	-130.96	230.38
T2 Promotive Voice (TR)	-.94*	.16	-.49	3.13	12.23*	5.52	74.90	108.38
T2 Promotive Voice (TR) ²			-.05	.37			-7.35	12.70
R ²	.29*		.29*		.06*		.06	
ΔR ²			.00				.00	

Note: *N* = 87; * *p* < .05; DV = dependent variable; BC = behavioral-coded measure of voice; TR = team-referent measure of voice; ^2 signifies squared term.

Appendix Table 8

Effects of Peer-Rated Prohibitive and Promotive Voice and Team Voice Distributions on Relationship Conflict and Team Performance (Study 1)

Time 1 Measures	DV = Time 1 Relationship Con.				DV = Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	2.69*	.40	1.65	.81	20.99	17.69	65.99	36.03
T1 Prohibitive Voice (PR)	-.30*	.10	-.04	.20	7.89	4.30	-3.63	9.11
T1 Prohibitive Voice Standard Deviation (PR)	.22	.19	2.79	1.75	6.46	8.26	-105.13	78.39
T1 Prohibitive Voice X Standard Deviation (PR)			-.66	.45			28.85	20.16
R ²	.13*		.15*		.04		.06	
Time 2 Measures	DV = Time 2 Relationship Con.				DV = Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	3.59*	.51	3.01*	1.06	-6.52	23.14	26.83	48.10
T1 Promotive Voice (PR)	-.49*	.12	-.35	.26	13.81*	5.28	5.59	11.66
T1 Promotive Voice Standard Deviation (PR)	-.05	.19	1.07	1.81	11.71	8.47	-53.00	82.23
T1 Promotive Voice X Standard Deviation (PR)			-.28	.45			16.24	20.52
R ²	.19*		.20*		.07*		.08	
Time 2 Measures	DV = Time 2 Relationship Con.				DV = Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	4.17*	.61	1.93	1.28	-17.37	20.66	-13.74	44.61
T2 Prohibitive Voice (PR)	-.63*	.14	-.09	.30	16.37*	4.64	15.49	10.57
T2 Prohibitive Voice Standard Deviation (PR)	.47*	.22	4.89*	2.24	11.27	7.63	4.08	78.41
T2 Prohibitive Voice X Standard Deviation (PR)			-1.07	.56			1.76	19.13
R ²	.13*		.15*		.13*		.13*	
Time 2 Measures	DV = Time 2 Relationship Con.				DV = Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	5.39*	.66	3.99*	1.10	-13.66	23.67	-28.10	40.08
T2 Promotive Voice (PR)	-.87*	.14	-.54*	.26	15.95*	5.12	19.39*	9.27
T2 Promotive Voice Standard Deviation (PR)	-.01	.23	2.67	1.72	5.44	8.40	33.24	62.66
T2 Promotive Voice X Standard Deviation (PR)			-.66	.42			-6.83	15.25
R ²	.38*		.40*		.12*		.12*	

Note: $N = 87$; * $p < .05$; DV = dependent variable; PR = peer-rated measure of voice.

Appendix Table 9a
Effects of Behavioral-Coded Promotive and Prohibitive Voice and Relationship Conflict on Team Performance (Study 1)

Time 1 Measures	Model 1		Model 2	
	B	SE	B	SE
Constant	61.78*	7.53	62.48*	11.81
T1 Prohibitive Voice (BC)	1.85*	.59	1.62	2.96
T1 Relationship Conflict	-7.72	4.31	-8.14	6.94
T1 Prohibitive Voice X Relationship Conflict			.14	1.75
R ²	.14*		.14*	
ΔR ²			.00	
Time 2 Measures	Model 1		Model 2	
	B	SE	B	SE
Constant	55.80*	7.71	39.02*	16.08
T1 Promotive Voice (BC)	1.08*	.27	2.46*	1.19
T1 Relationship Conflict	-8.11	4.18	1.84	9.36
T1 Promotive Voice X Relationship Conflict			-.82	.69
R ²	.19*		.20*	
ΔR ²			.01	
Time 2 Measures	Model 1		Model 2	
	B	SE	B	SE
Constant	54.12*	6.19	49.71*	10.02
T2 Prohibitive Voice (BC)	1.94*	.51	3.00	1.95
T2 Relationship Conflict	-3.98	2.99	-1.39	5.52
T2 Prohibitive Voice X Relationship Conflict			-.64	1.13
R ²	.17*		.17*	
ΔR ²			.00	
Time 2 Measures	Model 1		Model 2	
	B	SE	B	SE
Constant	49.97*	7.25	61.65*	16.79
T2 Promotive Voice (BC)	1.04*	.34	.16	1.19
T2 Relationship Conflict	-4.39	3.08	-10.67	8.69
T2 Promotive Voice X Relationship Conflict			.48	.62
R ²	.12*		.13*	
ΔR ²			.01	

Note: $N = 87$; * $p < .05$; BC = behavioral-coded measure of voice.

Appendix Table 9b
Effects of Team-Referent Promotive and Prohibitive Voice and Relationship Conflict on Team Performance (Study 1)

	Model 1		Model 2	
Time 1 Measures	B	SE	B	SE
Constant	55.88*	21.31	-18.58	92.80
T1 Prohibitive Voice (TR)	2.96	4.84	22.37	24.03
T1 Relationship Conflict	-7.76	4.64	36.84	54.29
T1 Prohibitive Voice X Relationship Conflict			-11.68	14.17
R ²	.04		.05	
ΔR ²			.01	
	Model 1		Model 2	
	B	SE	B	SE
Constant	26.67	24.94	-22.29	80.06
T1 Promotive Voice (TR)	8.49	4.88	20.26	18.91
T1 Relationship Conflict	-4.79	4.91	24.26	45.39
T1 Promotive Voice X Relationship Conflict			-7.05	10.95
R ²	.07*		.08	
ΔR ²			.01	
	Model 1		Model 2	
Time 2 Measures	B	SE	B	SE
Constant	17.66	22.02	6.09	79.45
T2 prohibitive voice (TR)	11.12*	5.21	13.98	19.58
T2 relationship conflict	-4.14	3.17	2.09	41.22
T2 prohibitive voice X relationship conflict			-1.54	10.18
R ²	.07*		.07	
ΔR ²			.00	
	Model 1		Model 2	
	B	SE	B	SE
Constant	8.62	32.66	-44.26	71.65
T2 promotive voice (TR)	11.13	6.58	23.76	16.59
T2 relationship conflict	-1.18	3.78	28.62	36.11
T2 promotive voice X relationship conflict			-7.20	8.68
R ²	.06		.06	
ΔR ²			.00	

Note: $N = 87$; * $p < .05$; TR = team-referent measure of voice.

**Appendix Table 10
Study 2 Outline of Team Scoring**

Event	Scoring	Total Points
Academic/ Professional	<p>Flights start with 20 points and lose 1 point for each late turn-in of any assignment or peer evaluation. Flights lose 2 pts for each individual failure (receiving a letter grade of “F”, or “Fail” on a “Pass/Fail” assignment). Flights will only lose 2 points for each team that fails the TR&IP Capstone presentation or Team Position Paper. Flights can also lose points for tardiness or unprofessional conduct and deductions will be at the discretion of the Ft CC and/or higher.</p> <p>Assignments include: <i>My Function Brief, FRLM Analysis Essay, Ethics Analysis Essay, Leadership Reflection Presentation, Weekly Journal Entries, TR&IP (individual Annotated Bibliography, team Presentation, Team Position Paper, and TR&IP peer evaluation) and Peer Evaluations (Midterm, End of Course, and Outstanding Contributor)</i></p>	20
Team Leadership Problems (TLP)	<p>There are three TLPs. Flights earn 4 points for each TLP solved. Bonus: <i>The top 10% of SOS flights earn 2 points and the top 33.3% of SOS flights earn 1 point. Top 10% or 33.3% is based on meeting/exceeding objectives.</i></p>	18
Team Challenge (TC)	<p>Flights earn 3 points for solving either part of the challenge in the time allowed. Flights earn 7 points for solving both parts of the challenge in the time allowed.</p>	7
Project X	<p>Flights earn 1 point for each Project X task solved. Bonus: <i>Complete 5 or 6 Project X tasks in a phase and flights earn 1 bonus point. Complete all 7 tasks in a phase and the flight earns 2 bonus points.</i></p>	18
Commandant’s Challenge	<p>There are 15 points possible for the push-ups, sit-ups, and run. If one person fails an event, the flight will lose 2 points per failed event, but the flight is still eligible for bonus points. Bonus: <i>The top 33.3% of flights earn 3 points and the top 10% of flights earn 6 pts. Note: If a flight member (not already on profile) fails to complete the run, the flight is ineligible for bonus points.</i></p>	21
Airpower and Doctrine Wargaming (ADWAR)	<p>ADWAR mission points are awarded on a curve based on historical data where scoring 97% or above earns 10 mission points, and below 70% earns 0 mission points. The scoring scale will be available to ADWAR reps.</p>	10
Field Leadership Exercise (FLEX)	<p>Each flight will play a total of four games, three games are for mission points. The flight’s second game at FLEX Challenge will be worth mission points as well as the two games at the FLEX Operation. Each flight will earn 2 points per victory and 0 points per loss. Bonus: <i>Flights that win all three operations will earn one bonus point. The top flight in the school, determined by total victories and largest combined point differential among all three games, earns one extra point. If an operation ends in a tied score, a winner will be determined as outlined in the rulebook.</i></p>	8

Appendix Table 11
Effects of Prohibitive and Promotive Voice on Relationship Conflict – Instructor-Ratings (Study 2)

DV = Time 1 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 1 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	1.66	.86	2.36*	1.04	1.95	1.05	11.69	8.62	17.18*	6.73	11.92	8.57
T1 Prohibitive Voice	.33	.21			.42	.28	-1.93	2.12			2.84	3.62
T1 Promotive Voice			.15	.25	-.16	.32			-3.32	1.68	-4.91	3.01
T1 Trust							-2.57	2.18	-4.04*	1.79	-2.78	2.20
Prohibitive Voice X Trust							.58	.53			-.67	.93
Promotive Voice X Trust									.94*	.44	1.31	.80
R ²	.08		.01		.09		.16		.20		.24	
ΔR ²							.08		.19			
DV = Time 2 Relationship Conflict												
	Model 1a		Model 1b		Model 1c		Model 2a		Model 2b		Model 3	
Time 2 Measures	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	3.14*	.95	4.43*	1.23	4.30*	1.28	4.07	12.08	2.08	10.78	3.87	14.83
T2 Prohibitive Voice	-.07	.24			.13	.28	.69	2.83			1.70	3.05
T2 Promotive Voice			-.38	.30	-.48	.36			1.04	2.59	-.95	3.13
T2 Trust							-.35	2.93	.45	2.46	.03	3.54
Prohibitive Voice X Trust							-.14	.68			-.32	.72
Promotive Voice X Trust									-.30	.59	.09	.69
R ²	.00		.07		.08		.22		.25		.31*	
ΔR ²							.21		.18			

Note: Time 1 *N* = 30 teams; Time 2 *N* = 24 teams * *p* < .05; DV = dependent variable.

Appendix Table 12
Effects of Prohibitive Voice, Promotive Voice, and Relationship Conflict on Time 2 Team Performance – Instructor Ratings (Study 2)

Time 1 Measures	Model 1a		Model 1b		Model 1c		Model 2c		Model 3c	
	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	65.89*	7.66	58.55*	9.16	61.87*	9.33	59.95	12.23	23.90	87.69
T1 Prohibitive Voice	-2.21	1.91			-3.45	2.52	-3.40	2.73	-8.35	36.05
T1 Promotive Voice			-.34	2.22	2.19	2.86	1.99	3.07	15.61	31.22
T1 Trust							.57	2.02	10.11	22.33
T1 Relationship Conflict							.13	1.80	.56	2.01
Prohibitive Voice X Trust									1.34	9.22
Promotive Voice X Trust									-3.69	8.31
R ²	.05		.00		.07		.07		.08	
ΔR ²							.00		.01	

Time 2 Measures	Model 1a		Model 1b		Model 1c		Model 2c		Model 3c	
	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	54.83*	10.02	34.45*	12.73	37.57	12.99	-4.97	26.85	10.86	160.34
T2 Prohibitive Voice	-.11	2.48			-3.07	2.79	-5.32	2.89	-10.69	33.25
T2 Promotive Voice			4.89	3.08	7.10	3.67	8.13*	3.68	9.70	33.89
T2 Trust							9.69	4.69	5.68	38.18
T2 Relationship Conflict							1.67	2.39	1.73	2.54
Prohibitive Voice X Trust									1.27	7.82
Promotive Voice X Trust									-.32	7.44
R ²	.00		.10		.15		.31		.31	
ΔR ²							.16		.16	

Note: Time 1 *N* = 30 teams; Time 2 *N* = 24 teams * *p* < .05.

Appendix Table 13
Curvilinear Effects of Student-Rated Measures of Prohibitive and Promotive Voice on Relationship Conflict and Team Performance (Study 2)

Time 1 Measures	DV = Time 1 Relationship Conflict				DV = T1 Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	6.64*	.99	13.73	10.46	9.88	11.44	-23.01	120.74
T1 Prohibitive Voice (SR)	-1.04*	.24	-4.48	5.06	4.59	2.71	20.55	58.40
T1 Prohibitive Voice (SR) ²			.42	.61			-1.93	7.05
R ²	.29*		.30*		.06		.06	
ΔR ²			.01				.00	
Time 2 Measures	DV = Time 2 Relationship Conflict				DV = T2 Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	6.80*	.99	-4.77	11.50	-.61	11.04	-69.54	129.42
T1 Promotive Voice (SR)	-1.02*	.22	4.26	5.23	6.71*	2.48	38.13	58.84
T1 Promotive Voice (SR) ²			-.60	.59			-3.57	6.68
R ²	.31*		.33*		.14*		.14*	
ΔR ²			.02				.00	
Time 2 Measures	DV = Time 2 Relationship Conflict				DV = T2 Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	6.66*	1.11	5.53*	1.24	55.48*	19.62	63.49*	22.66
T2 Prohibitive Voice (SR)	-.94*	.25	-.06	.54	.24	4.49	-5.97	9.75
T2 Prohibitive Voice (SR) ²			-.15	.08			1.03	1.44
R ²	.23*		.29*		.00		.01	
ΔR ²			.06				.01	
Time 2 Measures	DV = Time 2 Relationship Conflict				DV = T2 Team Performance			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	SE	B	SE	B	SE	B	SE
Constant	6.74*	1.14	6.49*	1.09	21.35	19.37	19.01	19.39
T2 Promotive Voice (SR)	-.93*	.25	-.42	.33	7.84	4.31	12.59*	5.89
T2 Promotive Voice (SR) ²			-.11	.07			-1.03	.88
R ²	.23*		.31*		.07		.10	
ΔR ²			.08*				.03	

Note: Time 1 $N = 49$; Time 2 $N = 48$; * $p < .05$; DV = dependent variable; SR = student-rated measure of voice; ^2 signifies squared term.

Appendix Table 14
Effects of Student-Rated Promotive and Prohibitive Voice and Relationship Conflict on Team Performance (Study 2)

	Model 1		Model 2	
Time 1 Measures	B	SE	B	SE
Constant	77.11*	30.79	127.16	109.01
T1 Prohibitive Voice (SR)	-2.07	6.22	-13.76	25.19
T1 Relationship Conflict (SR)	-5.21	3.24	-24.86	41.16
T1 Prohibitive Voice X Relationship Conflict			4.61	9.62
R ²	.06		.07	
ΔR ²			.01	
	Model 1		Model 2	
	B	SE	B	SE
Constant	18.94	30.68	79.61	98.86
T1 Promotive Voice (SR)	9.37	5.85	-4.16	21.76
T1 Relationship Conflict (SR)	-1.78	3.19	-28.26	41.12
T1 Promotive Voice X Relationship Conflict			5.94	9.19
R ²	.11		.12	
ΔR ²			.01	
	Model 1		Model 2	
Time 2 Measures	B	SE	B	SE
Constant	71.63*	26.23	78.85	121.02
T2 Prohibitive Voice (SR)	-2.04	5.12	-3.72	27.86
T2 Relationship Conflict (SR)	-2.42	2.61	-5.26	46.44
T2 Prohibitive Voice X Relationship Conflict			.66	10.82
R ²	.02		.02	
ΔR ²			.00	
	Model 1		Model 2	
	B	SE	B	SE
Constant	21.36	26.04	-130.96	108.18
T2 Promotive Voice (SR)	7.83	4.96	42.13	24.16
T2 Relationship Conflict (SR)	.00	2.54	58.20	40.23
T2 Promotive Voice X Relationship Conflict			-13.19	9.10
R ²	.07		.11	
ΔR ²			.04	

Note: Time 1 *N* = 49; Time 2 *N* = 48; * *p* < .05; DV = dependent variable; SR = student-rated measure of voice.

Figures

Figure 1
Theoretical Model

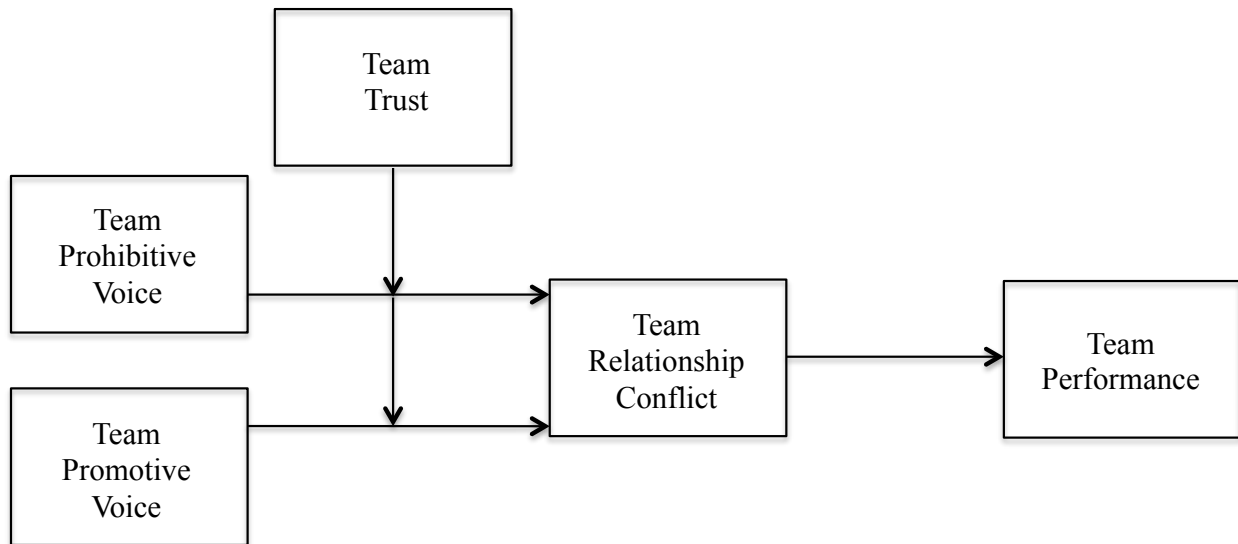


Figure 2a
Interaction Effect of Time 2 Prohibitive Voice X Time 2 Team Trust on Time 2 Relationship Conflict (Study 1)

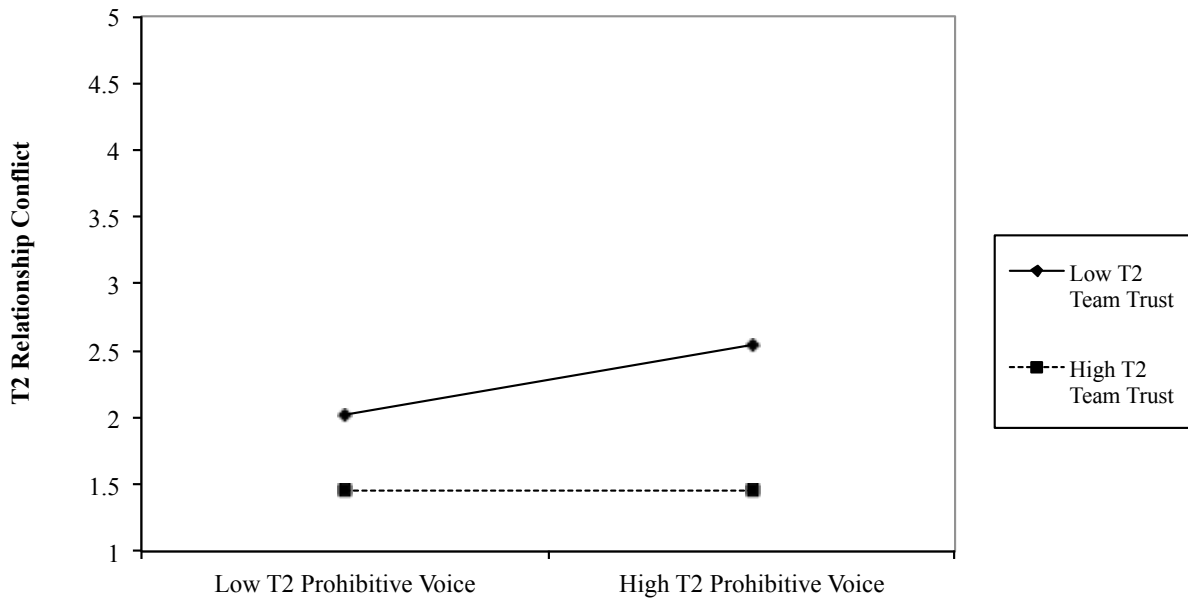


Figure 2b
Interaction Effect of Time 1 Prohibitive Voice X Time 1 Team Trust on Time 2 Relationship Conflict (Study 1)

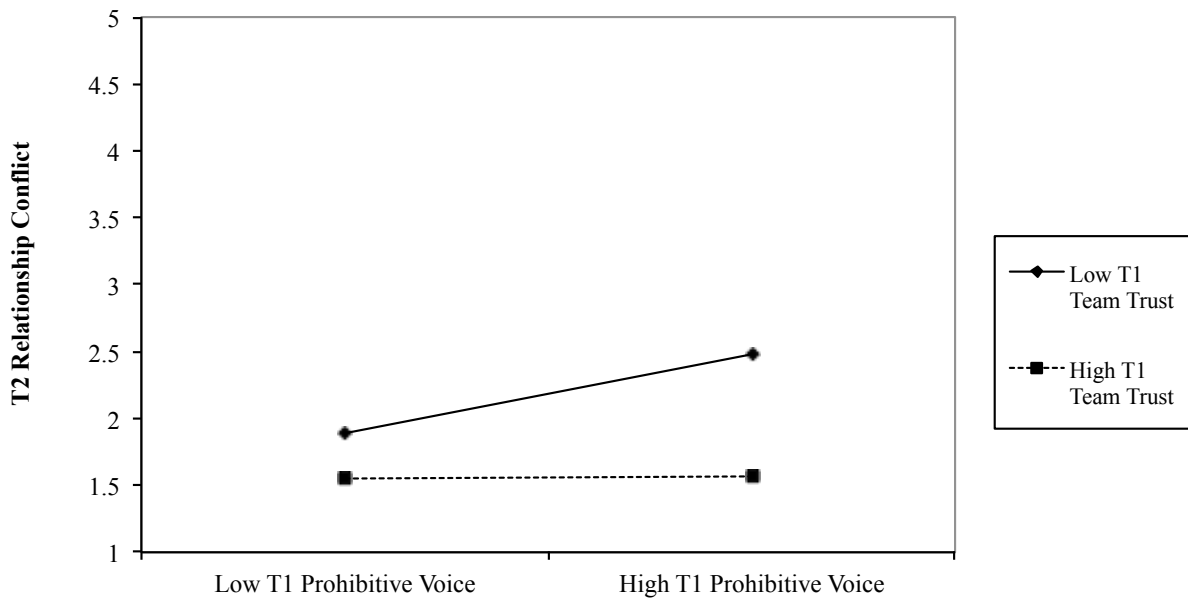


Figure 3
Interaction Effect of Time 1 Promotive Voice X Time 1 Team Trust on Time 2 Relationship Conflict (Study 1)

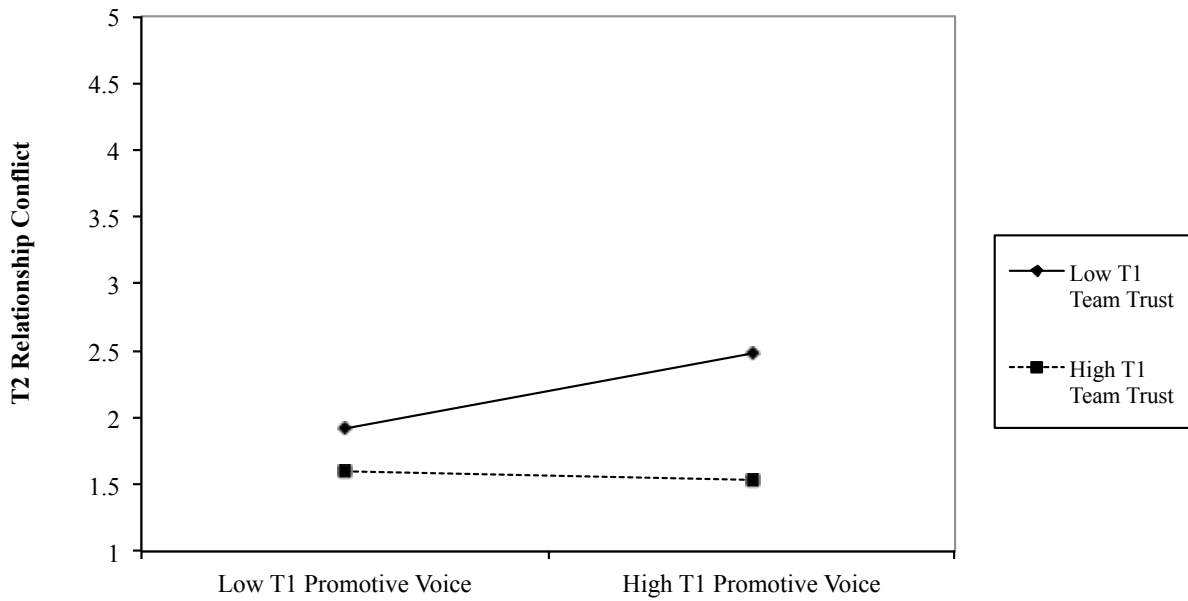


Figure 4a
Interaction Effect of Time 1 Task Conflict X Time 1 Team Trust on Time 1 Relationship Conflict (Study 1)

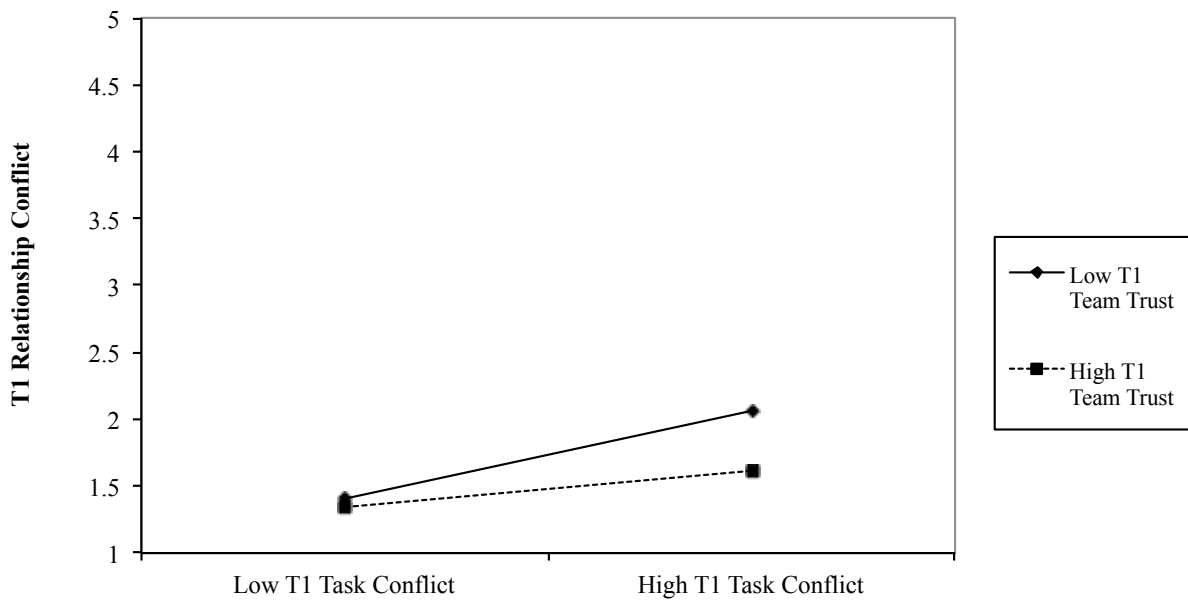
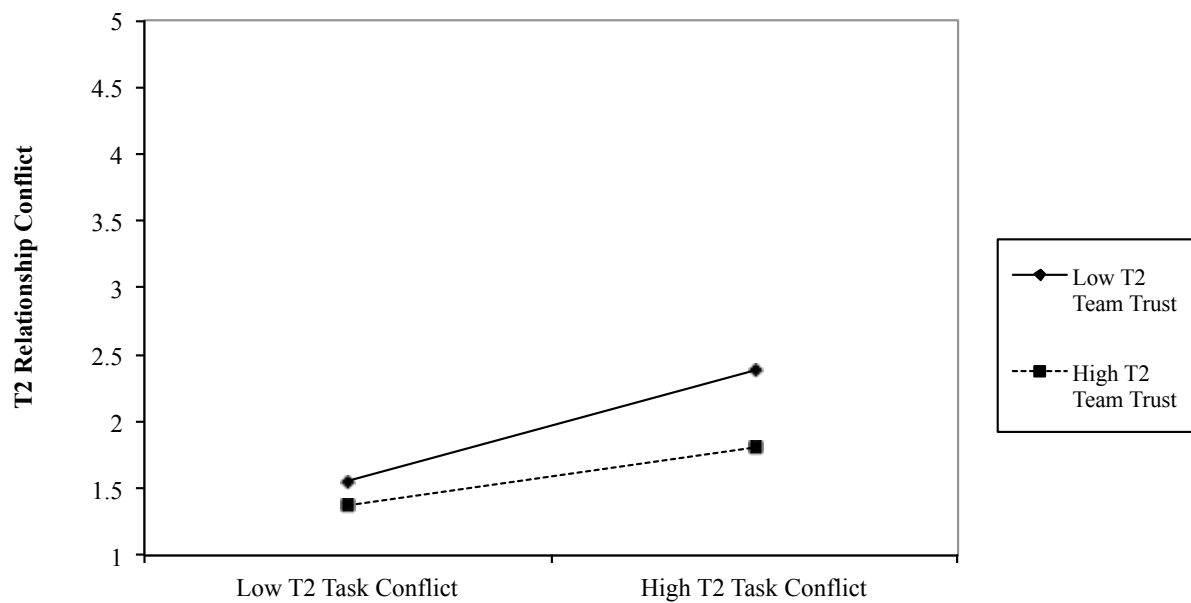


Figure 4b
Interaction Effect of Time 2 Task Conflict X Time 2 Team Trust on Time 2 Relationship Conflict (Study 1)



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