YOU SPEAK, I SPEAK:

THE SOCIAL-COGNITIVE MECHANISMS OF VOICE CONTAGION

Thomas W. H. Ng, PhD (Contact Author)
University of Hong Kong
Department of Management and Strategy
Faculty of Business and Economics
Pok Fu Lam, Hong Kong
Email: tng@business.hku.hk

Lorenzo Lucianetti, PhD
University of Chieti and Pescara
Department of Management and Business Administration
Viale Pindaro 42 - 65127 Pescara, Italy
Email: llucianetti@unich.it

Dennis Y. Hsu, PhD
University of Hong Kong
Department of Management and Strategy
Faculty of Business and Economics
Pok Fu Lam, Hong Kong
Email: dennishsu@business.hku.hk

Frederick H. K. Yim, PhD
Hong Kong Baptist University
Department of Marketing
IMGWLB 511A
34 Renfrew Road, Kowloon Tong
Hong Kong
Email: fredyim@hkbu.edu.hk

Kelly L. Sorensen, PhD
Right Management
100 Manpower Place
Milwaukee, WI 53212
Email: kelly.sorensen@right.com

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ABSTRACT

This study examines whether and how constructive voice (i.e., suggestions intended to promote positive changes at work) is contagious. Guided by social cognitive theory, we propose that witnessing a coworker's voice increases an employee's propensity to engage in voice via two parallel psychological mechanisms: voice self-efficacy beliefs and voice instrumentality beliefs. Data collected from a vignette experiment ($N = 661$), an experience-recall experiment ($N = 548$), and a field study ($N = 549$) provide evidence supporting the proposed voice contagion. The results also suggest that voice contagion is activated by witnessing the voice of any coworker, as the evidence supported voice contagion even when controlling for employees' evaluations of coworkers' warmth and competence. Thus, this study contributes to the voice literature by identifying social learning from coworker voice as a crucial relational antecedent of employee voice and revealing two possible processes by which voice spreads in the workplace.

Keywords: voice; contagion; self-efficacy; instrumentality; coworker

Constructive voice (or "voice" hereafter) is the expression of well-intended suggestions that advance the interests of an organization (LePine & Van Dyne, 1998). As voice can ultimately promote functional organizational outcomes such as performance and innovation (Bashshur & Oc, 2015; Lam & Mayer, 2014), many scholars have examined the factors that motivate employee voice, such as dispositional characteristics (e.g., LePine & Van Dyne, 2001; Tangirala, Kamdar, Venkataramani, & Parke, 2013), work environment conditions (e.g., Fuller, Marler, & Hester, 2006; Schmitt, Den Hartog, & Belschak, 2016), and organizational policies and programs (e.g., Conway, Fu, Monks, Alfes, & Bailey, 2016; Knoll & Redman, 2016).

Relational antecedents are relatively under-represented in the literature on voice determinants. This omission is important because voice does not exist in a vacuum but rather in an interpersonal context (LePine & Van Dyne, 1998). Voice is "targeted explicitly at someone within the organization" (Chamberlin, Newton, & LePine, 2017, p. 11), and there is always a receiver to whom a sender makes his or her suggestions (Bashshur & Oc, 2015; Takeuchi, Chen, & Cheung, 2012). Therefore, voice is best understood in its interpersonal context. The observation that worrying about upsetting social relationships is a major concern underlying voice underscores the strong influence of relational factors. Milliken, Morrison, and Hewlin (2003) found that concerns about being viewed or labeled negatively by others at work was the most frequently mentioned reason for a low level of voice. In other words, voicers often contemplate relational factors in their immediate social environment before speaking. Similarly, in a meta-analytical review of the inhibitors of voice, Ng and Feldman (2012) indicated that among all of the inhibitors they examined, the supervisor's interactional unfairness, which is relational in nature, had the strongest influence. In a review of multiple forms of voice, Klass et al. (2012) also emphasized the interpersonal risks associated with any form of voice and noted that voice "may easily expose the employee to consequences ranging from embarrassment … to

retaliation" and that "across the different forms of voice examined to date, issues of [interpersonal] risk and safety appear to be important" (p. 322). These observations converge to suggest that voice is strongly affected by social relationships and that relational antecedents of voice based on stronger theorizing should occupy a more central role in voice research. Without a deeper understanding of the relational antecedents of voice, researchers risk overlooking the most proximal social context in which voice occurs and overstating the effects of other groups of voice antecedents. Hollenbeck (2008) emphasized that in theory development, it is important to build a new consensus. A shift in the voice paradigm from the current approaches to the under-utilized relational view represents an initial step in building a consensus regarding the importance of the relational antecedents of voice. Only by continuing to identify relational antecedents of voice can researchers acquire a complete understanding of how different aspects of a voicer's interpersonal environment shape voice, which is clearly interpersonal in nature.

Despite the importance of the relational antecedents of voice, empirical research on such antecedents remains rather limited in number and scope. In a quantitative review of the voice literature, Chamberlin et al. (2017) identified 32 key voice antecedents, of which only eight (25%) are relational in nature. Within that small subcategory, six are leadership factors and only two are related to coworkers, namely social support and group identification. In other words, among the few known relational antecedents of voice, coworker factors are even less well-examined. A few recent voice studies have begun to explore the effects of coworker factors, such as social networks (Venkataramani, Zhou, Wang, & Shi, 2016) and coworker mood (Liu et al., 2015), on voice, but such studies remain rare. Coworker factors must be addressed because in many work settings, employees frequently communicate and collaborate with coworkers on a daily basis. As Chiaburu and Harrison (2008, p. 1082) emphasized, "individuals in every type of organization have coworkers who are partners in social and task interactions." Coworkers should

therefore "have a nontrivial influence" (p. 1084) on employees in general. In a qualitative review of the voice literature, Morrison (2014), urged researchers to more thoroughly examine the research question of "[h]ow do relations with coworkers affect voice and silence?" (p. 190). Morrison (2014) considered this theoretical issue as one of the voice-related research topics that "are not just questions that have been insufficiently addressed in existing work, but also questions that I believe to have the most potential for expanding our understanding of employee voice and silence in meaningful ways and for providing guidance to managers who wish to ensure that voice is not being stifled or ignored in their organizations" (p. 190).

Among the many possible coworker factors to examine, an understanding of why and how employees learn from their coworkers' voice (i.e., voice contagion) is an especially important phenomenon for multiple reasons. First, by investigating voice contagion, we can demonstrate the powerful effects of coworkers on an employee's voice, even if this influence is unintentional. For example, an employee might simply observe and learn from a coworker's voice and then repeat the same behavior. Voice contagion acknowledges that coworker voice is likely to be heard and cognitively processed by an employee and that the propensity to voice can spread rather swiftly and naturally, even without external interventions or direct communication. As such, employee voice is unlikely to be independent of coworker voice. An examination of voice contagion will reveal this unknown process and shift the focus of voice research to relational antecedents, particularly coworker factors. Second, the socially risky nature of voice is the main reason why employees remain silent (Milliken et al., 2003). An examination of voice contagion demonstrates a crucial way by which this evaluation apprehension might be reduced. Specifically, employees are inclined to take their coworker's voice as an example and a source of internal motivation to effectively execute their own voice. In fact, employees tend to follow coworkers' responses and behaviors (Bommer, Miles, & Grover, 2003; Brett & Stroh, 2003;

Felps et al. 2009), perhaps because these are prominent social cues that support employees to

make better work decisions and to display appropriate workplace behaviors. Consequently, an

understanding of voice contagion could illustrate one important mechanism (i.e., social learning

from coworkers' voice) by which employees overcome the fear and anxiety frequently present in

voice (Lebel, 2016). Third, the extent of voice contagion directly determines the extent of

aggregate voice in the workplace. When voice contagion is pervasive, a workplace will receive

many suggestions from workers, which will benefit the organization's productivity and

adaptability. As such, addressing voice contagion shows how voice can spread to influence the

organization's well-being. This in turn suggests to managers that when their goal is to design

workplace interventions that promote and sustain voice, they should emphasize coworker

influence (e.g., cultivate more teamwork, remove communication barriers, and encourage

workers to observe each other's functional work behaviors) to maximize effectiveness. Hence, a

stronger understanding of voice contagion also has important managerial implications.

The goal of this study is to examine voice contagion. Building on Bandura's (1977; 1997;

2001) social cognitive theory, we propose that an employee socially learns from a coworker's

voice via at least two processes. First, we argue that witnessing a coworker's voice promotes the

employee's voice self-efficacy beliefs, namely the idea that he or she can effectively execute

voice. This is consistent with the main tenet of social cognitive theory, wherein witnessing a

behavior increases one's confidence in one's ability to replicate that behavior. Second, we argue

that witnessing a coworker's voice promotes the employee's voice instrumentality beliefs,

namely the idea that he or she can gain desired outcomes through voice, by alerting the employee

to the importance and usefulness of that behavior. This mechanism extends social cognitive

theory by legitimizing the role of instrumentality beliefs in social learning. Specifically,

witnessing a coworker's voice may heighten the employee's awareness of and sensitivity to

voice as an exemplary work behavior that is appreciated by the organization. The instrumentality

mechanism is particularly novel to the voice literature. The importance and usefulness of voice

may not be apparent to employees until they witness this exemplary work behavior in their

coworkers. As such, investigating the mechanism of voice instrumentality extends social

cognitive theory by unpacking a psychological process based on vicarious learning of the value

of an exemplary work behavior. Crucially, these voice self-efficacy and instrumentality

mechanisms operate in parallel, and overlooking either will likely result in an incomplete

understanding of voice contagion. Figure 1 depicts the proposed theoretical model, which

illustrates the parallel mediating roles of voice self-efficacy beliefs and voice instrumentality

beliefs in the relationship between witnessing a coworker's voice and the employee's own voice.

INSERT FIGURE 1 ABOUT HERE

In brief, this study contributes to the voice literature in two important ways. First, it

examines voice contagion for the first time. Particularly, the relational antecedents of voice

warrant attention because of the interpersonal nature of voice (Bashshur & Oc, 2015; Takeuchi et

al., 2012). Coworker factors, which are under-represented in the voice literature (Morrison,

2014), are especially worthy of investigation, as employees and coworkers frequently

communicate and collaborate (Chiaburu & Harrison, 2008; LePine & Van Dyne, 1998). Voice

contagion arguably deserves even more attention than other coworker factors because it

demonstrates the impact of simple observation on voice, represents a crucial way by which

employees can overcome the risk in voice, and could potentially help organizations increase

aggregate voice. Second, this study, which is guided by social cognitive theory (Bandura, 1977;

1997; 2001), examined two parallel and theory-based mechanisms to explain why voice

contagion between employees and coworkers is likely to occur. As Colquitt and Zapata-Phelan (2007) noted, theory building can be achieved by introducing mediators (in our case, voice self-efficacy beliefs and voice instrumentality beliefs) of an important relationship or process.

HYPOTHESIS DEVELOPMENT

Voice Contagion: The Self-Efficacy Mechanism

Social cognitive theory (Bandura, 1977; 1997; 2001) suggests that individuals are agentic: they strive to attain their valued goals through their own actions and develop cognitive beliefs that motivate their behaviors. This is especially true regarding self-efficacy beliefs, which are defined as confidence in one's ability to execute the actions necessary to manage prospective situations (Bandura, 1986; 1995). Individuals with strong self-efficacy beliefs feel certain that they can execute the actions needed for success (Gist, 1987; Hughes, Galbraith, & White, 2011).

In the context of voice, *voice self-efficacy beliefs* refer to confidence in one's ability to provide suggestions that can benefit the organization (Janssen & Gao, 2015). According to social cognitive theory, self-efficacy beliefs can be enhanced through vicarious learning, that is, by observing the explicit behaviors of others (Bandura, 2001). Such observation enables individuals to effectively learn behaviors and avoid expending unnecessary effort in a cycle of trial and error (Hoover, Giambatista, & Belkin, 2012; Manz & Sims, 1981). Vicarious learning involves several mental stages, including attention (awareness of a behavior), retention (ability to remember the behavior), and reproduction (ability to repeat the behavior) (Bandura, 1986), providing observers with a mental script for repeating a behavior effectively (Gioia & Manz, 1985).

As vicarious learning contributes to self-efficacy beliefs, we propose that an employee who sees a coworker engage in voice will feel more confident about the likely effectiveness of his or her own voice and will be more likely to believe that his or her voice can bring about meaningful and impactful changes in the workplace. Witnessing a coworker's engagement in

voice creates a cognitive schema that mentally guides the employee in his or her attempts to reproduce voice. This socially constructed confidence is especially necessary for voice, which is often associated with immense social risks because it may cause others to feel disturbed or aggravated (Burris, 2012; Frese & Fay, 2001; Milliken et al., 2003). Therefore, exemplification by coworkers is critical to the construction of an employee's voice self-efficacy beliefs.

> *H1: Witnessing a coworker's voice is positively related to the focal employee's voice self-efficacy beliefs.*

The employee's voice self-efficacy beliefs should enhance his or her voice. Confidence in one's ability to execute a behavior motivates one to engage in that behavior (Bandura, 2001; Gist, 1987). In their review of the influence of self-efficacy, Stajkovic and Luthans (1998, p. 240) noted that "[i]ndividuals who perceive themselves as highly efficacious activate sufficient effort that, if well executed, produces successful outcomes, whereas those who perceive low self-efficacy are likely to cease their efforts prematurely and fail in the task." Similarly, Parker, Bindl, and Strauss (2010, p. 834) noted that as a result of the social risks associated with proactive behavior, including the use of voice, people "need to feel *confident* [italics added] they can both initiate proactive goals and deal with their consequences before they act."

> *H2: The focal employee's voice self-efficacy beliefs are positively related to his or her propensity to voice.*

Voice Contagion: The Instrumentality Mechanism

This study extends social cognitive theory by incorporating instrumental beliefs into the social learning process. The self-efficacy mechanism discussed previously underlies the construction of the confidence needed to engage in unfamiliar or socially risky behavior, whereas the instrumentality mechanism captures a social learning response based on understanding the importance and usefulness of an exemplary behavior after witnessing it in others.

Voice instrumentality beliefs reflect the extent to which the employee believes that his or her voice will facilitate the attainment of desired resources and goals (Avery & Quinones, 2002). Such beliefs are activated by witnessing a coworker's engagement in voice, which is an exemplary behavior in the workplace. By observing the coworker's engagement in a benevolent and altruistic behavior, the employee's belief that such behavior is useful, important, and broadly appreciated is heightened. Voice can stimulate positive changes (Bashshur & Oc, 2015; Janssen, 2001). Not surprisingly, robust evidence indicates that those who display this type of exemplary work behavior are more likely to be considered socially influential and to receive higher performance ratings (Burris, Detert, & Romney, 2013; Fuller, Barnett, Hester, Relyea, & Frey, 2007; Grant, 2013; Howell et al., 2015; Ng & Feldman, 2012; Van Dyne & LePine, 1998; Whiting, Podsakoff, & Pierce, 2008). Similarly, Weiss and Morrison (2019) demonstrated that voicers are viewed as having higher status than others. Burris (2012) also highlighted the exemplary nature of voice and argued that as voice "can help managers who receive it become more successful, those managers should view those who speak up positively" (p. 851).

We thus contend that the employee's belief that voice is value-adding and appreciated is strengthened by witnessing a coworker engage in this type of exemplary work behavior. This is consistent with Chen, Takeuchi, and Shum's (2013, p. 1619) assertion about the attention-shifting role of coworkers: employees "rely on simplified cues to form impressions of their problems, verify their understanding about the reality, and regulate their behaviors" and coworkers "often provide such cues through their overt statements and behaviors." Merely witnessing a coworker engage in voice, an exemplary work behavior, sensitizes the employee to the importance and usefulness of voice and thus enhances his or her voice instrumentality beliefs.

H3: Witnessing a coworker's voice is positively related to the focal employee's voice instrumentality beliefs.

Voice instrumentality beliefs motivate the employee to engage in voice because voice is seen as important and useful. Voice instrumentality beliefs also enhance the employee's persistence in the face of setbacks and adversity when engaging in voice because overcoming these obstacles is considered worthwhile if voice is believed to be important and useful (Li, Li, & Chen, 2018). Jiao, Richards, and Zhang (2011) observed that instrumentality beliefs about citizenship behavior are positively related to actual citizenship behavior. Likewise, Unsworth and Clegg (2010) found that employees are more likely to engage in creative endeavors when they believe the endeavors are instrumental, important, and useful. Thus, strengthening an employee's beliefs about the instrumentality of voice should increase his or her voice.

H4: The focal employee's voice instrumentality beliefs are positively related to his or her propensity to voice.

Parallel Mediating Mechanisms

The above discussion suggests that both voice self-efficacy and instrumentality beliefs are mediators in the relationship between witnessing a coworker's voice and the employee's own voice. This self-efficacy mediating mechanism is grounded in social cognitive theory (Bandura, 1995), which suggests that witnessing a behavior displayed by others (e.g., coworker voice) enhances one's confidence (e.g., voice self-efficacy beliefs) and thus motivates the same behavior (e.g., employee voice). The instrumentality mediating mechanism operates in parallel with and independently of the self-efficacy mediating mechanism. From an instrumentality perspective, it extends social cognitive theory by highlighting why an employee becomes interested in displaying an exemplary work behavior after seeing a coworker do so. Witnessing a coworker engage in an exemplary work behavior (e.g., coworker voice) strengthens the employee's belief about the importance and usefulness of the behavior (e.g., voice instrumentality beliefs), which in turn activates the same behavior (e.g., employee voice).

H5: The focal employee's voice self-efficacy beliefs mediate the relationship between witnessing a coworker's voice and the focal employee's propensity to voice beyond the voice instrumentality mechanism.

H6: The focal employee's voice instrumentality beliefs mediate the relationship between witnessing a coworker's voice and the focal employee's propensity to voice beyond the voice self-efficacy mechanism.

METHOD OVERVIEW

Following the full-cycle research paradigm (Chatman & Flynn, 2005), we conducted multiple studies in different settings. Study 1 involved two experiments (with different designs) that provided stronger causal evidence supporting the proposed effects of witnessing voice (Aguinis & Bradley, 2014; Spencer, Zanna, & Fong, 2005). Study 2 was a field study in which individuals with diverse jobs and cultural backgrounds were surveyed with the aim of triangulating our findings (Nosek et al., 2015; Scandura & Williams, 2000) in a field setting.

STUDY 1A: METHOD AND RESULTS

Samples and Procedures

The sample comprised 661 currently employed individuals recruited to participate in a vignette experiment via Amazon Mechanical Turk. The participants, who were randomly selected from the platform database, had a mean age of 41 years. Furthermore, 49% were female, 79% were White, 45% were married, 80% had a college education, 36% were managers, 33% had an organizational tenure of 1–3 years, 38% had a job tenure of 1–3 years, and 80% were employed full-time. The scenario-based methodology enhanced the experimental realism and allowed us to manipulate the predictor variable using different vignettes, thus strengthening both internal and external validity (Aguinis & Bradley, 2014). Previous studies have shown that the Amazon Mechanical Turk online platform can generate research samples comparable to those

obtained using other traditional recruiting methods, especially organizational research methods (Buhrmester, Kwang, & Gosling, 2011; O'Reilly, Aquino, & Skarlicki, 2016; Paolacci, Chandler, & Ipeirotis, 2010). Studies conducted on this online platform have been shown to have good internal and external validity levels similar to those using data collected via other participant pools and recruiting strategies (Berinsky, Huber, & Lenz, 2012).

We created vignettes that approximated workplace scenarios (Aguinis & Bradley, 2014). The scenarios, given in Appendix A, described a fictional company that had developed a new product but experienced a shortage of raw materials. The company's R&D department attended a product development meeting to discuss the production issues. The subjects were then instructed to take on the role of "Allen," a representative from the R&D department who attended the meeting with his coworker, "Bryan." Bryan was described (a) as having either voiced suggestions or as having remained silent during the meeting, (b) as either a close friend or a mere acquaintance, and (c) as either competent or incompetent. For (a), we created several suggestions that were each relatively neutral in tone and associated with both pros and cons.

We incorporated coworker warmth and competence into the experimental design to control for their effects on our proposed voice contagion. Warmth and competence are two major dimensions of social evaluation (Fiske, 1993; Fiske, Cuddy, & Glick, 2007; Fiske, Glick, & Xu, 2002). Specifically, warmth is the extent to which an individual is good-natured, trustworthy, tolerant, friendly, and sincere, whereas competence is the extent to which an individual is capable, skillful, intelligent, and knowledgeable (Cuddy, Fiske, & Glick, 2008; Fiske, 1993; Wojciszke, 1994). As Cuddy, Glick, and Beninger (2011, p. 76) noted, "people's spontaneous construals of others' behaviors and characterizations of others center on warmth and competence." Thus, in the context of this study, the employee participants were also likely to formulate perceptions of their coworkers' warmth and competence. Importantly, such

perceptions might confound the proposed voice contagion and should be addressed. For instance, employees might be inclined to learn socially from warmer or more competent coworkers who exhibit positive interpersonal or task-related attributes, and thus the employees would be more likely to imitate the voices of those coworkers. If voice contagion remains evident even after controlling for coworker warmth and competence, it would have important theoretical implications for advancing voice contagion research. Specifically, this observation would suggest that witnessing *any* coworker's voice might spark the onset of voice contagion. Consequently, voice contagion might be activated simply by watching a coworker speak out, regardless of the employee's perception of the coworker's warmth and competence.

In essence, our scenario experiment was a $2 \times 2 \times 2$ factorial design (i.e., witnessing vs. not witnessing coworker voice, high vs. low coworker warmth, high vs. low coworker competence). Subjects were randomly assigned into one of the eight experimental conditions.

Measures

All of the subjects reported their *voice self-efficacy beliefs* (e.g., I am confident about my ability to speak up with constructive suggestions; $\alpha = .95$), *voice instrumentality beliefs* (e.g., I believe that my chance of promotion in this company will be higher if I make more constructive suggestions; $\alpha = .92$), and *propensity to voice* (e.g., In the current and upcoming product development meetings, I will suggest changes to work projects in order to make them better; $\alpha = .94$). These scales were similar to those used in Study 2 and used scores of 1 (strongly disagree) and 5 (strongly agree) as anchors. We also administered three checks to determine the success of our three experimental manipulations; each measure had three items. The α values of these checks were acceptable: witnessing voice manipulation check, $\alpha = .99$; coworker warmth manipulation check, $\alpha = .88$; and coworker competence manipulation check, $\alpha = .98$. We also

added an attention check question, which asked the subjects to write a letter and not click any anchors; only nine subjects were removed as a result of failing the attention check.

Manipulation Check and Hypothesis Testing

The experimental manipulations were successful. Subjects in the witnessing voice condition ($n = 326$) reported a higher level of witnessing Bryan's voice ($M = 4.59$, $SD = 0.60$) than did those in the not witnessing voice condition ($n = 335$; $M = 1.27$, $SD = 0.74$), and this difference was significant ($F_{(1, 659)} = 3984.10$, $p < .01$). In addition, those in the high coworker warmth condition ($n = 330$) reported that Bryan's warmth level was higher ($M = 4.15$, $SD = 0.72$), compared with those in the low coworker warmth condition ($n = 331$; $M = 1.92$, $SD = 0.84$), and this difference was significant ($F_{(1, 659)} = 1346.19$, $p < .01$). Finally, those in the high coworker competence condition ($n = 330$) reported that Bryan's competence level was higher ($M = 4.48$, $SD = 0.67$) than did those in the low coworker competence condition ($n = 331$; $M = 2.31$, $SD = 0.99$). This difference was also significant ($F_{(1, 659)} = 1083.61$, $p < .01$).

Next, we examined the measurement model fit of our scales using several fit indices: TLI, CFI, RMSEA, and SRMR (Hu & Bentler, 1998). Table I presents the descriptive statistics for our study variables, and Table II presents the fit indices. The full measurement model containing our study variables had an acceptable fit (TLI = .97, CFI = .97, RMSEA = .07, SRMR = .02), suggesting that our scales had largely acceptable psychometric properties.

INSERT TABLES I AND II ABOUT HERE

We then conducted a multivariate analysis of variance (MANOVA) and a regression analysis to examine our hypotheses. As shown in Table III, the MANOVA revealed that witnessing coworker voice manipulation (not witnessing vs. witnessing coworker voice) resulted

in significantly higher levels of subjects' voice self-efficacy beliefs (3.88 vs. 4.21, $p < .01$) and voice instrumentality beliefs (3.81 vs. 4.12, $p < .01$) beyond the influence of coworker warmth and competence. These results supported H1 and H3. The regression analysis (Table III) further showed that subjects' voice self-efficacy beliefs ($\beta = .37$, $p < .01$) and voice instrumentality beliefs ($\beta = .40$, $p < .01$) were jointly related to their self-rated propensity to voice beyond the influence of coworker warmth and competence. These results supported H2 and H4.

INSERT TABLE III ABOUT HERE

To examine the mediation effects, we used a Bayesian estimation because the significance test for the product of the two paths has weak power due to the assumption that it follows a normal distribution, which is rarely true (MacKinnon & Dwyer, 1993; MacKinnon, Fairchild, & Fritz, 2007). Hence, we followed Yuan and MacKinnon (2009) and tested the mediation effects using a Bayesian approach, which relied less on the normality assumption.

The two core mediating effects were tested simultaneously to control for each other's effects. The results, presented in Table IV, shows that voice self-efficacy beliefs significantly mediated the positive relationship between the witnessing voice manipulation and the subject's own propensity to voice (indirect effect = .058, 95% confidence interval [CI] = .036 to .086). H5 was therefore supported. Similarly, voice instrumentality beliefs significantly mediated the positive relationship between the witnessing voice manipulation and the subject's propensity to voice (indirect effect = .065, 95% CI = .039 to .089). Thus, H6 was also supported.

INSERT TABLE IV ABOUT HERE

STUDY 1B: METHOD AND RESULTS

Samples and Procedures

In Study 1B, we experimentally manipulated the subjects' recall of work experiences. Although this approach carried the risk of memory errors (Clarke, Fiebig, & Gerdtham, 2008; Kjellsson, Clarke, & Gerdtham, 2014), the strength of this design was its ability to capture subjects' responses to real work events and experiences, rather than hypothetical scenarios and characters, while allowing researchers to manipulate the independent variable. The recalled incidents were likely to resonate more strongly with the subjects than the hypothetical scenarios and would thereby elicit more authentic responses. As such, this incident recall method alleviated concerns that the hypothetical scenarios were too distal or irrelevant to the subjects. Rather, the recall of personal experiences created highly vivid and relevant mental images. The incident recall method has been adopted increasingly in management studies (Hohmann & Walter, 2019; Holtz, & Harold, 2008; Yam, Klotz, He, & Reynolds, 2017; Zheng, van Dijke, Narayanan, & De Cremer, 2018). To mitigate recall errors, we added an additional screening question in our design. Specifically, we asked subjects whether they could recall the described scenario when administering the manipulation, and excluded those who indicated they could not.

The sample comprised 548 subjects recruited via both Prolific Academic and Amazon Mechanical Turk, with a mean age of 33 years. Of the sample, 50% were aged ≤ 30 years, 47% were female, 76% were White, 41% were married, 91% had a college education, 39% were managers, 38% had an organizational tenure of 1–3 years, 41% had a job tenure of 1–3 years, and 100% were employed full-time. These participants were selected randomly from the databases of the two platforms. Prolific Academic reports a similar operation as Amazon Mechanical Turk and has been used in prior management studies (e.g., DeCelles, DeVoe, Rafaeli, & Agasi, 2019; Windeler, Chudoba, & Sundrup, 2017) and voice studies (e.g., Weiss &

Morrison, 2019). We found that the two samples from the two sources were not significantly different (ps > .05) in terms of gender, education level, and job level. However, the Prolific Academic sample was significantly (ps < .05) younger, had shorter job and organizational tenures, and included more unmarried and ethnically diverse respondents than the Amazon Mechanical Turk sample. Overall, the use of both platforms successfully increased the background diversity of our sample and strengthened its representativeness.

The independent variable was witnessing vs. not witnessing voice. In the witnessing voice condition, we asked subjects to recall a meeting in which they had witnessed a coworker display voice. In the not witnessing voice condition, we asked subjects to recall a meeting in which they had witnessed a coworker remain silent even when an opportunity to speak arose. Those who indicated that they successfully recalled the requested scenario were asked to write about that meeting to further reinforce the manipulation, whereas those who indicated that they could not recall the described scenario were thanked and excluded from the experiment (n = 40). Next, subjects were asked to (a) complete a manipulation check measure, (b) recall warmth and competence with respect to the coworker, (c) recall their voice self-efficacy and instrumentality beliefs and voice level after witnessing their coworker's behavior, and (d) predict whether they would speak out in an upcoming meeting in their current workplace. Predicted voice served as an additional measure of voice propensity after priming the subjects to think about witnessing vs. not witnessing coworker voice. Appendix B provides details about our experimental manipulation and the measures, which were similar to those used in Studies 1A and 2. Also similar to Study 1A, we added an attention check question and excluded 11 subjects who failed it.

A sample item from the manipulation check (α = .99) is "In the meeting I recalled, I witnessed my coworker make suggestions." To measure *voice self-efficacy beliefs* and *voice instrumentality beliefs*, we first asked the subjects to think of the recalled meeting and describe

how they felt after they had witnessed their coworker's behavior in the meeting. A sample item related to voice self-efficacy beliefs ($\alpha = .93$) is "I felt confident about my ability to speak up with constructive suggestions." A sample item related to voice instrumentality beliefs ($\alpha = .92$) is "I believed that my chance of promotion would be higher if I made more constructive suggestions." To measure *recalled voice*, we asked the subjects to again think about the meeting and recall the extent to which they spoke up in that meeting after witnessing their coworkers' behavior. A sample item ($\alpha = .94$) is "I proposed ideas for new or more effective work methods." Finally, to measure *predicted voice*, we asked subjects to think of their current jobs and then imagine an upcoming work meeting that they would attend soon. Then, we asked the subjects about the likelihood that they would want to speak in that meeting. A sample item ($\alpha = .94$) is "I think I will propose ideas for new or more effective work methods."

As in Study 1A, we controlled for coworker warmth and competence. To measure these aspects, we asked the subjects to think of the recalled coworker and evaluate their relationship with that coworker and the coworker's work abilities. Respective sample items related to coworker warmth ($\alpha = .89$) and competence ($\alpha = .96$) are "I had an effective working relationship with this coworker" and "This coworker competently fulfilled his/her responsibilities."

Manipulation Check and Hypothesis Testing

Table V presents the descriptive statistics. The manipulation was successful. Subjects in the witnessing voice condition ($n = 276$) reported a higher level of witnessing a coworker's voice ($M = 4.71$, $SD = 0.53$) than those in the not witnessing voice condition ($n = 272$; $M = 1.37$, $SD = 0.78$), and this difference was significant ($F_{(1, 546)} = 3451.44$, $p < .01$). Moreover, the full measurement model containing our study variables had an acceptable fit (TLI = .96, CFI = .97, RMSEA = .05, SRMR = .03). Thus, our scales had acceptable psychometric properties.

INSERT TABLE V ABOUT HERE

We conducted a MANOVA and regression analysis to examine our hypotheses. As shown in Table VI, the witnessing coworker voice manipulation (not witnessing vs. witnessing coworker voice) was associated with significantly higher levels of voice self-efficacy beliefs (3.70 vs. 4.03, $p < .01$) and voice instrumentality beliefs (3.10 vs. 3.21, $p < .05$) beyond the influence of coworker warmth and competence. Hence, both H1 and H3 were supported.

INSERT TABLE VI ABOUT HERE

Next, the regression analysis (Table VI) showed that both voice self-efficacy ($\beta = .53$, $p < .01$) and instrumentality beliefs ($\beta = .14$, $p < .01$) were positively related to recalled voice beyond the effects of coworker warmth and competence. Similarly, both voice self-efficacy ($\beta = .43$, $p < .01$) and instrumentality beliefs ($\beta = .24$, $p < .01$) were positively related to predicted voice beyond the effects of coworker warmth and competence. H2 and H4 were thus supported.

Table IV shows that voice self-efficacy beliefs mediated the relationships of the witnessing voice manipulation with the subject's recalled voice (indirect effect = .070, 95% CI = .023 to .118) and predicted voice (indirect effect = .053, 95% CI = .017 to .091). H5 was thus supported. Voice instrumentality beliefs also mediated the relationships of the witnessing voice manipulation with the subject's recalled voice (indirect effect = .014, 95% CI = .000 to .034) and predicted voice (indirect effect = .018, 95% CI = .000 to .042). H6 was also supported.

Summary

The two experiments in Study 1 generally supported the existence of the proposed voice contagion. By using vignette scenarios that manipulated witnessing coworker voice or subjects'

memories of work experiences as the basis of the manipulation, Studies 1A and 1B provided

convergent evidence indicating that both voice self-efficacy and instrumentality beliefs mediate

the effects of witnessing coworker voice on one's own propensity to voice. These effects were

observed even after controlling for coworker warmth and competence, which suggests that our

findings are generally robust. Study 2 extended these experimental findings to a field setting.

STUDY 2: METHOD AND RESULTS

Samples and Procedures

Study 2 used a convenience sampling strategy to recruit respondents. Different forms of

convenience sampling have been adopted in management research, such as using student

contacts with currently employed individuals (Halbesleben & Bowler, 2007; Morgeson &

Humphrey, 2006; Priesemuth, Schminke, Ambrose, & Folger, 2014) or with professionals and

managers (Tepper, 1995) to create a snowball sample, asking working students to participate

directly in the study or to recruit other working adults to participate (Grant & Mayer, 2009;

Piccolo, Greenbaum, Den Hartog, & Folger, 2010), relying on the authors' personal and

professional contacts to create a snowball sample (Butts, Becker, & Boswell, 2015; Panaccio &

Vandenberghe, 2012), a combination of the above strategies (Hulsheger, 2016), and other

variants of snowball sampling (McGrath et al., 2017; Wang & Groth, 2014).

Our approach was consistent with the aforementioned techniques. Specifically, we sent

invitations to our personal and professional contacts in Hong Kong and in Italy and offered a

small monetary incentive (US$10) in exchange for their participation. Individuals who expressed

interest were directed to a registration website and asked to recommend a coworker to join the

project (i.e., dyad formation). We emphasized the selection of a coworker with whom the

interested contact had regular workplace interactions to ensure that the coworker would have

sufficient knowledge of the contact's qualities and behaviors. Next, we communicated with the

identified coworkers, confirmed their coworker status through a declaration statement, and assured them of data confidentiality. We also ensured that each participant registered only once and only played one role (either the employee or coworker) in a single dyad. These efforts yielded 549 independent employee–coworker dyads, including 321 from Hong Kong and 228 from Italy. A majority (73%) of the participants recommended coworkers of the same rank as themselves, while 11% of the dyads had members whose ranks differed by only one job level. We sent surveys to the employees and coworkers simultaneously. The surveys remained open for two weeks. Two reminder emails were sent to participants who did not respond.

Compared with the Italian sample, the Hong Kong sample included significantly more women ($p < .01$), was significantly younger ($p < .01$), had a significantly higher level of education ($p < .01$), and had a significantly shorter average job tenure ($p < .01$) and average organization tenure ($p < .01$). However, the two samples did not differ in terms of the average job level. As we observed evidence of measurement invariance between the two samples (explained below), we combined the two samples for subsequent analyses.

In the employee sample, 55% were female and 34%, 49%, 5%, and 12% were $\leq$ 25, 26–34, 35–40, and > 40 years old, respectively. Moreover, 20% were married and 69% held college degrees. In addition, 22%, 46%, 15%, and 17% reported an organizational tenure of < 1, 1–2, 3–5, and $\geq$ 6 years, respectively. Finally, 19% identified themselves as managers. All of the participants were full-time employees. A variety of industries and sectors were sampled, including accounting, finance, architecture, IT, design, biotechnology, consulting, research, engineering, law, healthcare, management, and customer service.[1]

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[1] In the coworker sample, 56% were female; 30%, 49%, and 21% were $\leq$ 25, 26–34, and $\geq$ 35 years old, respectively; 24% were married; and 70% held college degrees. Furthermore, 21%, 42%, 14%, and 23% reported an organizational tenure of < 1, 1–2, 3–5, and $\geq$ 6 years, respectively. In addition, 22% of the coworker respondents identified themselves as managers.

We compared our sampling method and sample characteristics with those of other studies of voice that had been published in top-tier management journals to determine whether our approach was convergent with those of at least some other voice studies. First, we observed that our convenience sampling technique was consistent with that used in voice studies by both Takeuchi et al. (2012) and Lin and Johnson (2015). Both of those studies used snowballing techniques to create field samples. The gender distribution (55% female) and the relatively young age and short tenure of our sample were comparable to the samples reported by Liu et al. (2015) (60% female, average age = 28 years, average tenure = 3 years) and Wei, Zhang, and Chen (2015) (50% female, average age = 29 years, average tenure = 2.3 years). Our finding that the majority (69%) of the respondents held college degrees was consistent with the samples reported by Ng and Feldman (2013) (85%) and Tangirala et al. (2013) (70%). The wide range of industries included in our sample was similar to the samples used by Podsakoff, Maynes, Whiting, and Podsakoff (2015) and Detert and Edmondson (2011). Finally, the voice levels observed in our sample ($M = 3.32$–3.36, $SD = 0.86$–0.87) were within the ranges of voice ratings observed in other studies of voice ($M = 3.00$–3.62, $SD = 0.76$–0.87; Aryee et al., 2017; Burris, Detert, & Chiaburu, 2008; Fast, Burris, & Bartel, 2014). In brief, the sampling method, sample characteristics, and voice ratings used in our study did not appear to differ drastically from those in other studies of voice in the management field, suggesting that our results are generalizable.

Measurement Scales

Table VII lists the descriptive statistics for the study variables. Unless otherwise noted, the rating options were from 1 (strongly disagree) to 5 (strongly agree).

INSERT TABLE VII ABOUT HERE

RUNNING HEAD: VOICE CONTAGION

Witnessing coworker voice. The employees rated whether they witnessed the coworker's voice, using Maynes and Podsakoff's (2014) scale (e.g., "This coworker suggests changes to work projects in order to make them better;" 1 = never to 5 = always; α = .94).

Voice self-efficacy beliefs. The employees reported their voice self-efficacy beliefs using a 5-item scale adapted from Janssen and Gao (2015) and Wang, Gan, Wu, and Wang (2015) (e.g., "I am confident about my ability to speak up with constructive suggestions"; α = .89).

Voice instrumentality beliefs. The employees evaluated their voice instrumentality beliefs using a 5-item scale adapted from Hui, Lam, and Law (2000) (e.g., "I believe that my chance of promotion will be higher if I make more constructive suggestions"; α = .89).

The employee's voice. The paired coworker assessed the employee's voice using the scale by Maynes and Podsakoff (2014) (e.g., "This employee suggests changes to work projects in order to make them better;" 1 = never to 5 = always; α = .95). The use of a coworker's rating of employee voice as the dependent variable reduced common method bias because the independent variable (i.e., witnessing coworker voice) was reported by the employee.

Coworker warmth and competence. As in Study 1, the effects of both coworker warmth and competence were controlled. A search of the management literature revealed that few studies have directly captured perceived coworker warmth. However, a good proxy would be coworker exchange quality, defined as the extent to which an employee believes his or her relationship with a coworker is of high quality (Seers, 1989; Sherony & Green, 2002). A close and strong relationship suggests that the employee considers the coworker to be trustworthy, dependable, sincere, supportive, and benevolent toward him or her, and these communal characteristics are cues of coworker warmth. Thus, the employee assessed the quality of his or her exchange with the paired coworker, using six items adapted from Sherony and Green (2002) (e.g., "This coworker would 'bail me out' at his/her expense;" α = .85). To capture perceived

coworker competence, the employee assessed the paired coworker's work capability by using

five items (e.g., "This coworker competently fulfills his/her responsibilities;" α = .94) adapted

from Williams and Anderson (1991) and Gong, Huang, and Farh (2009).

     Additional control variables. We further controlled for two additional sets of variables

that might affect an employee's voice propensity: perceptions of the workplace climate and

sociodemographic background. All of these control variables were reported by the employee

respondents. Specifically, in workplaces where voice is not explicitly encouraged, voice

contagion might be less likely to occur even when coworker voice is witnessed, as the work

environment does not generally endorse this behavior. In contrast, voice contagion might be

more easily activated in workplaces where voice is appreciated. Thus, we controlled for this

potential confounding factor of *perceived voice climate*, which refers to the employee's

perception of whether voice is welcomed (Frazier & Bowler, 2015; Morrison, Wheeler-Smith, &

Kamdar, 2011; Wei et al., 2015). This variable was measured using seven items adapted from

Frazier and Bowler (2015) and Liang, Farh, and Farh (2012) (e.g., "In this organization,

employees can freely express their true thoughts on work issues;" α = .89).

     A workplace's emphasis on competitiveness is a particularly relevant workplace climate

factor in the context of voice contagion. Voice contagion involves an employee's imitation of a

coworker's voice, and voice is a performance criterion (Ng & Feldman, 2012; Whiting et al.,

2008) that affects resource allocation between employees and their coworkers. As such, whether

the workplace encourages or discourages competition among workers should matter. In

workplaces where competition is emphasized, voice contagion might be more evident because

imitating a coworker's behavior ensures that the employee will not fare worse in managers'

decisions about resource allocation. In workplaces where competition is not emphasized,

employees might feel less pressure to closely monitor and imitate their coworkers' behaviors.

Voice contagion, hence, should be less apparent in a noncompetitive setting. Whereas the voice climate is a potential confounder because it indicates whether voice itself is generally welcomed and appreciated at work, competitive climate is a potential confounder because it indicates whether it is necessary to imitate one's coworkers in using voice to protect and acquire resources for oneself. Thus, we controlled for *perceived competitive climate*, which refers to one's perception that workplace rewards are contingent upon outperforming one's coworkers (Arnold, Flaherty, Voss, & Mowen, 2009; Fletcher & Nusbaum, 2010). This was measured using seven items adapted from Fletcher and Nusbaum (2010) (e.g., "In this organization, employees are acknowledged for their accomplishments only when they outperform their coworkers;" $\alpha = .93$).

We also controlled for six sociodemographic variables, *gender*, *age*, *organizational tenure*, *job tenure*, *job level*, and *education level*, which are potentially relevant to voice propensity. Gender was controlled because prior voice studies have observed significant gender-based differences in the propensity to speak out; particularly, women might be less likely to speak out, especially in male-dominant industries and unsupportive work environments (Eibl, Lang, & Niessen, 2020). Age and tenure were controlled because employees who are older or have longer job and organizational tenures might be more savvy in the effective use of voice without drawing social resistance, due to their rich life and work experiences (Ng & Feldman, 2010a; 2010b). These older employees might feel more comfortable and confident in speaking out, compared with younger and less seasoned employees. Regarding job level, employees who occupy higher job levels are more likely to voice because managerial roles often require people to be more vocal about their stances and opinions on work matters (Mowbray, 2018). For instance, felt responsibility (which should be present in higher-level jobs) is a possible driver of an employee's propensity to voice (Chamberlin et al., 2017). Finally, education level was controlled because employees who are more educated might have more insights and knowledge

on a variety of work issues (Ng & Feldman, 2009), which might manifest in greater voice usage when compared with their less educated counterparts. All of the abovementioned control variables were specified as affecting the endogenous variables in the testing model.

Preliminary Analyses

Confirmatory factor analyses. The measurement model containing the study scales had an acceptable fit (TLI = .95, CFI = .96, RMSEA = .05, SRMR = .04). The standardized factor loadings are presented in the Online Supplement (Table S1). All factor loadings were positive and significant, suggesting that our scales had acceptable psychometric properties.

Discriminant validity. We examined all of the possible pair-wise factor correlations by combining the variables in turn and evaluating the model fit for deterioration (Edwards, 2001; Mallard & Lance, 1998). As shown in the Online Supplement (Table S2), combining items from each pair of variables resulted in a substantial increase in the chi-square value ($\Delta\chi^2$ = 875.34-2697.65, ps < .01), indicating that our scales captured distinct constructs as intended.

Common method variance. Following the approach recommended by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), we specified a latent common method factor underlying all of the scale items reported by the employees to examine the extent of common method variance. As shown in the Online Supplement (Table S3), the factor loadings of all of our scale items remained statistically significant after including the common method variance factor, suggesting that common method variance was not a serious threat to our data analysis.

Measurement equivalence. We examined factorial and measurement error equivalence (Vandenberg & Lance, 2000) to determine whether combining the two samples from Hong Kong and Italy would be reasonable. The results are presented in the Online Supplement (Table S4). In terms of factorial equivalence, four scales, namely witnessing coworker voice, voice self-efficacy beliefs, voice instrumentality beliefs, and coworker competence, demonstrated full

factorial equivalence between the two samples. Voice demonstrated partial factorial equivalence, as four of the five items were equal in strength between the two samples. The scale with the least factorial equivalence was coworker warmth, as the factor loadings for five of the six items differed significantly between the two samples. With regard to the measurement error equivalence, 24 of 31 items (77%) had equivalent measurement errors between the two samples. A high level of error equivalence is difficult to attain in an empirical study (Ployhart & Vandenberg, 2010). Thus, 77% was a rather robust indicator of error equivalence. The generally positive measurement equivalence justified the combination of the two samples in this study.

Hypothesis Testing

As shown in Table II, the proposed model had an acceptable fit (TLI = .94, CFI = .95, RMSEA = .05, SRMR = .06). Table VIII and Figure 2 present the standardized estimates.

INSERT TABLE VIII AND FIGURE 2 ABOUT HERE

After controlling for the effects of coworker warmth and competence, perceived voice climate and perceived competitive climate, sociodemographic variables, and the parallel instrumentality mechanism, witnessing a coworker's voice was positively related to the employee's voice self-efficacy beliefs ($\beta = .17$, $p < .01$), which in turn were positively related to his or her own voice (as rated by the coworker) ($\beta = .16$, $p < .01$). These results supported H1 and H2. Witnessing a coworker's voice was also positively related to the employee's voice instrumentality beliefs ($\beta = .24$, $p < .01$) beyond the aforementioned control variables. In turn, voice instrumentality beliefs were positively related to the employee's own voice (as rated by the coworker) ($\beta = .12$, $p < .05$). These results supported H3 and H4.

Moreover, as shown in Table IV, Bayesian mediation analyses showed that the employee's voice self-efficacy beliefs significantly mediated the relationship between witnessing a coworker's voice and his or her own voice (indirect effect = .026, 95% CI = .006 to .058) beyond the control variables. H5 was thus supported. Voice instrumentality beliefs also significantly mediated the relationship between witnessing a coworker's voice and the employee's own voice (indirect effect = .027, 95% CI = .002 to .061) beyond the control variables. H6 was supported.

Summary

In Study 2, we further examined voice contagion in a field setting and observed support for H1–H6. Specifically, witnessing a coworker's voice was positively related to the employee's voice self-efficacy beliefs and voice instrumentality beliefs. In turn, both types of beliefs were positively related to the employee's own voice (as rated by the coworker). Voice self-efficacy and instrumentality beliefs also mediated the relationship between witnessing a coworker's voice and the employee's own voice (as rated by the coworker). Crucially, these observed positive effects remained significant even when we controlled for coworker warmth and competence.

DISCUSSION

Implications for Theory Development

This study makes two contributions to the voice literature. First, voice theories seldom consider how employee voice is affected by coworker factors. As described by Morrison (2014), we need "to consider more fully the effects of one's colleagues and relationships with one's colleagues on the decision of whether to engage in voice or remain silent, as it is likely that voice is shaped by social and relational factors" (p. 195). Unfortunately, empirical research has lagged in this regard. Few relational antecedents of voice are known, and most are leadership behaviors (i.e., transformational leadership, leader-member exchange, ethical leadership, leader openness,

trust in leader, low abusive supervision) rather than coworker factors (group identification, social

support; Chamberlin et al., 2017). This study contributes to the voice literature by being the first

to document voice contagion as an important coworker factor that promotes employee voice.

Among the many possible coworker factors, voice contagion is arguably the most important

because a voice must be heard by others to be effective and meaningful. A coworker's

suggestion is likely to be witnessed by employees (e.g., during workplace collaborations), and

the coworker's voice might become a social cue that promotes the employee's voice-related

beliefs and motivates his or her own voice. We thus extend the voice literature by demonstrating

an apparently close and positive covariation of employee voice with coworker voice.

Second, we identify two parallel mechanisms (self-efficacy and instrumentality) as

pathways through which voice contagion occurs. We determine that both the self-efficacy and

instrumentality mechanisms are possible mediators in the voice contagion process. The self-

efficacy mechanism focuses on the employee's confidence in speaking up; this is needed to

overcome the socially risky nature of voice (Burris, 2012; Detert & Edmondson, 2011; Lebel,

2016), which might be the main psychological barrier to using one's voice (Brinsfield, 2013;

Milliken et al., 2003). To overcome this psychological hurdle, an employee must feel confident

about his or her ability to execute voice. Although voice self-efficacy could be developed

through various mechanisms (Bandura, 1997), vicarious learning is arguably the least costly, as it

occurs naturally in a relationship, even without interventions. The instrumentality mechanism

focuses on the values of voice at work; specifically, witnessing a coworker's use of voice

heightens one's awareness of the importance and usefulness of voice and its association with

one's desired goals and outcomes. The instrumentality mechanism extends social cognitive

theory by identifying a social learning mechanism based on understanding the importance and

usefulness of a behavior after witnessing a coworker engage in that behavior. In brief, this study

provides initial evidence that both voice self-efficacy and instrumentality beliefs are possible

pathways that explain the voice contagion process and suggests that each adds incremental value.

More broadly, this examination of voice contagion complements or extends some of the

theoretical approaches adopted by researchers to examine the relational antecedents of voice.

One such approach is the social network approach (Venkataramani & Tangirala, 2010;

Venkataramani et al., 2016), wherein those who occupy central network positions are more

inclined to speak out. Our voice contagion approach complements this social network approach,

such that voice contagion might spread via employees' social networks. We speculate that a

broader social network might lead to more extensive voice contagion because workers in the

same social network might imitate each other's voices, and the resulting contagion might even

spread to other networks with common contacts. By combining the social network approach and

our proposed voice contagion approach, we can easily understand why an individual worker's

voice can potentially determine the aggregate intensity of voice throughout an organization.

Other studies of the relational antecedents of voice have frequently adopted a theoretical

approach that seeks to understand whether employees feel psychologically safe to speak out

(Lebel, 2016; Liu et al., 2015; Takeuchi et al., 2012; Wei et al., 2015). Our proposed voice

contagion approach is built partially on this psychological safety approach; specifically, by

following coworkers who engage in voice, the employee feels that it is safer to engage in voice.

Employees build their self-efficacy and instrumentality beliefs based on the coworker's voice,

and these beliefs become the impetus for them to engage in voice. The voice contagion view

suggests that the social risk of voice could be reduced simply and effectively by using a

coworker's voice as an example. We surmise that this imitation strategy would help reduce the

inherent social risk because the employee is now the second-mover and has an example to follow.

The proposed voice contagion is also relevant to other areas of voice research. The dispositional approach focuses on identifying the trait predictors of voice (e.g., Zare & Flinchbaugh, 2019), whereas the management practice approach focuses on identifying the schemes and policies that draw voice (e.g., empowerment, delegation; Chamberlin, Newton, & LePine, 2018). We speculate that voice contagion can help explain the importance of these other approaches. Perhaps individuals with the dispositional qualities to learn effectively from others would be more likely to display voice, and perhaps management schemes and policies affect employee voice by building an environment conducive to social learning from each other's behavior. Voice contagion is also relevant to research on the consequences of voice. Ng et al. (in press) examined voice consequences from a "sociometer" view, and suggest that employees monitor whether their voice will be accepted or rejected by coworkers, as the latter hinders their self-evaluations. The contagion and "sociometer" approaches are complementary. Employees gather social cues from coworkers' voices and use these cues to build stronger internal beliefs about speaking out (the voice contagion view); after speaking out, employees gather social cues from coworkers' reactions to construct their self-concepts (the "sociometer" view).

In extending the use of the voice contagion view in future voice research, whether employees would imitate the voice of any coworker is a logical question. Although this study does not directly address this question, we demonstrate that voice contagion is evident even after controlling for coworker warmth and competence, the two fundamental dimensions that people use to evaluate each other (Fiske, 1993). In other words, an employee does not learn from only a few coworkers. Rather, any coworker who speaks up might activate voice contagion for an employee. Witnessing a coworker's voice gives employees an example upon which to construct their voice self-efficacy beliefs and increases their awareness of the importance and utility of voice. These social learning processes are activated largely based on witnessing a functional

work behavior that is worth learning, rather than on who displays the functional work behavior. In other words, although witnessing the voice of a warm or competent coworker might tend to inspire imitation, social learning can be enabled even by witnessing a cold or incompetent coworker's voice. These examples can still become the basis of an employee's mental script regarding the display of voice and his or her awareness of the importance and utility of voice.

Implications for Practice

Voice has been widely encouraged, as it can promote organizational improvement, adaptation, and innovation. Nevertheless, many employees remain silent (Matsunaga, 2015; Milliken et al., 2003). Hence, our study provides the important message that, in organizations in which managers want to gather employees' suggestions and opinions, a blind focus on motivating employees to speak up might not achieve the intended benefits and may even create stress and resistance among the employees. Instead, managers can consider the alternative route advocated in this study, namely creating or facilitating voice contagion to put employees at ease and enable them to recognize the value of speaking up. To that end, the increased use of teamwork or other forms of interdependence, an increased number of team meetings in which workers are given ample voice opportunities, the removal of communication barriers in social networks, and providing encouragement to employees to learn from each other's functional behavior may be beneficial to the whole organization in terms of promoting voice contagion. For employees who are anxious about speaking up, our results highlight one important and quick remedy. These employees can first observe coworkers' voices, which should help them to develop confidence in their voice ability and promote their beliefs about the importance and usefulness of voice. The growth of these internal beliefs, in turn, is likely to promote voice.

For managers who want to encourage employees to speak out with suggestions, our study demonstrates that voice contagion is driven by at least two parallel and reasonable mechanisms,

namely the self-efficacy and instrumentality mechanisms, although other mechanisms may be involved. The self-efficacy mechanism suggests that employees need to feel confident in their ability to speak up, which is partly attributable to vicarious learning from coworkers. In contrast, the instrumentality mechanism suggests that employees need to know and understand the importance and usefulness of voice, which is also partially attributable to vicarious learning from coworkers. The manager's role is to facilitate these two processes by supporting the construction of voice-related confidence (e.g., by encouraging the open sharing of suggestions among employees) and fostering employees' awareness of the importance and usefulness of voice (e.g., by clarifying the significance of voice and why it is appreciated and valued by the organization).

Crucially, for managers who wish to hear more suggestions and opinions from employees, this study demonstrates that voice contagion can occur regardless of the employee's opinion of the coworker, as evidenced by the significant contagion effects even when both coworker warmth and competence were controlled. Perhaps witnessing any coworker's voice can enhance an employee's voice self-efficacy and instrumentality beliefs. This is a potentially important message for managers who might doubt whether voice contagion occurs easily at work or believe that employees only learn from selected coworkers. We help dispel such doubts by demonstrating that perhaps simply witnessing a coworker's voice can increase an employee's confidence in his or her own ability to speak up and his or her belief that voice is important and useful. At the very least, we highlight an important set of additional relational factors (coworker warmth and competence) that managers should consider in their strategies to promote voice.

Study Limitations

As Study 1A is a vignette study, we could only examine imaginary reactions and intentions. In Study 1B, we rely on subjects' recall of work experiences, the accuracy of which might vary among subjects. However, our main aim in the two experiments is to demonstrate

that witnessing a coworker speaking up versus remaining silent generates different voice-related beliefs, and we achieve this goal. In addition, the scenarios in the vignettes and recall exercises were designed to be similar to experiences the subjects might have encountered in their daily work lives. As such, the subjects' responses were likely to be honest and direct.

In Study 2, the data are cross-sectional. A stronger design would require, for example, a field experiment in which witnessing vs. not witnessing is manipulated, the propensity to voice is assessed objectively (e.g., number of suggestions made), and the explanatory process variables are observed in some sequential order. We also rely on other means to remove alternative explanations, such as the use of coworker ratings of employee voice to alleviate concerns about common method bias and the incorporation of coworker warmth, coworker competence, workplace climate, and sociodemographic variables as control variables to rule out some of the alternative explanations. A second limitation is that we recruited respondents from our contact networks, which limits the generalizability of the results. Fortunately, our final sample includes participants from a range of fields and cultural backgrounds, rather than from a single industry and country. In addition, a comparison of our sample with those used in other voice studies reveals similarities. These observations reduce the concerns about the representativeness of our sample. However, future studies should aim to improve the sampling method, especially when using a convenience sampling approach. For instance, researchers could consider using more than one source of convenience sampling, which would enable comparisons across the sampling methods and the drawing of inferences regarding whether different convenience sampling methods generate different findings of voice contagion. Researchers could also compare subsamples, such as subjects who agree to participate soon after being contacted by the research team vs. those who sign up only after follow-up invitations were sent, or those who recommend a regular coworker vs. those who recommend a team member. Our sampling design did not allow

us to address these finer issues, and we encourage researchers to do so when using convenience sampling. Third, the employee participants reported most of the measures except for the dependent variable of voice. Thus, common method variance might be an issue. However, our preliminary data analyses indicate that common method variance was not a serious problem.

Other limitations apply to both Studies 1 and 2. First, voice contagion occurs via other mechanisms, which should be identified in future research. For instance, when an employee witnesses coworker voice, he or she might feel a strong sense of citizenship pressure, which would motivate the employee to follow the coworker's behavior. Additionally, an individual who witnesses his or her coworker's use of voice might feel inspired to do the same or become envious, and thus might increase his or her own use of voice. Social inclusion may also be a factor; when the employee sees a coworker's use of voice, he or she may want to befriend that coworker (e.g., as a result of a perceived value fit), which would prompt the employee to act in a similar manner as the coworker to advance the relationship.

Second, this study focuses on constructive voice because it is the most frequently examined type of voice in the literature (Chamberlin et al., 2017; Ng & Feldman, 2012). Consequently, other types of voice (promotive vs. prohibitive voice; supportive, defensive, vs. destructive voice; Liang et al., 2012; Maynes & Podsakoff, 2014) are not examined, although these might also be contagious. For instance, an employee may feel more comfortable with criticizing the organization if he or she witnesses coworkers being critical of the organization. Similarly, coworkers who focus more on prohibitive over promotive voice might lead employees to ignore the promotive voice. Future research should address how other types of coworker voice affect employees' propensity to engage in those types of voice. Our proposed self-efficacy and instrumentality mechanisms should provide a useful basis for exploring these questions.

Third, we did not examine how the success of voice might alter the strength of the proposed process. We argue here that the social learning process operates independently of the outcomes of voice, because merely seeing others engage in voice may be sufficient to build one's confidence and raise awareness about the value of voice. However, as voice is socially risky, it would be interesting to examine the effects of witnessing the rejection of coworkers' suggestions. For instance, whether a coworker's voice is rewarded may be a moderator of our proposed effect.

Finally, we treat witnessing coworker voice as an independent variable, without considering other predictors. This focused approach is consistent with other studies that examine voice as a predictor of work outcomes (Burris, 2012; Li, Liao, Tangirala, & Firth, 2017; McClean, Burris, & Detert, 2013). In addition, we include two relational factors, coworker warmth and competence, and our results remained supportive of our predictions even after controlling for the effects of these factors on our proposed process. Future research could compare the predictive power of witnessing voice with that of other known antecedents of voice.

Conclusions

We provide initial evidence to support the existence of voice contagion and identify two possible mediating mechanisms. When employees witnesses coworkers' use of voice, they might feel greater confidence in their ability to use their own voice, believe that doing so is important and useful and, ultimately, use their own voice in the workplace. These effects were observable even after we controlled for employees' perceptions of their coworkers' warmth and competence, suggesting that voice contagion is generally robust. We hope that our findings will encourage research interest in voice contagion and further studies of the underlying psychological mechanisms. We also hope that our findings will promote managerial effectiveness. Given a clearer understanding of voice contagion, managers who hope to increase the overall voice intensity in the workplace can design social interventions to facilitate voice contagion.

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Table I. *Study 1A: Means, Standard Deviations, and Correlations among Variables.*

	1	2	3	4	5	6
1. Witnessing coworker voice (-1 = no, 1 = yes)	--					
2. Voice self-efficacy beliefs	.20**	(.95)				
3. Voice instrumentality beliefs	.20**	.43**	(.92)			
4. Self-rated voice propensity	.18**	.54**	.56**	(.94)		
5. Control variable: coworker warmth (-1 = low, 1 = high)	-.01	.11**	.03	.02	--	
6. Control variable: coworker competence (-1 = low, 1 = high)	.00	-.01	-.03	-.05	-.01	--
Mean	-0.01	4.04	3.96	4.19	-0.00	-0.00
SD	1.00	0.81	0.78	0.77	1.00	1.00

Note. $N = 661$; $^{**}p < .01$; coefficient alphas are provided in parentheses.

Table II. *Fit Indices*.

	χ^2	df	TLI	CFI	RMSEA	SRMR
Study 1A: The full measurement model (voice self-efficacy beliefs, voice instrumentality beliefs, and self-rated voice propensity)	348.37	87	.97	.97	.07	.02
Study 1B: The full measurement model (voice self-efficacy beliefs, voice instrumentality beliefs, recalled voice, predicted voice, coworker warmth, and coworker competence)	906.66	419	.96	.97	.05	.03
Study 2: The full measurement model (witnessing coworker voice, voice self-efficacy beliefs, voice instrumentality beliefs, coworker-rated voice, coworker warmth, and coworker competence)	986.88	419	.95	.96	.05	.04
Study 2: The proposed model	1311.25	602	.94	.95	.05	.06

Note. χ^2 = chi-square value; df = degree of freedom; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Squared Error of Approximation; SRMR = Standardized Root Mean Squared Residual.

Table III. *Study 1A: Multivariate Analysis of Variance (MANOVA) and Regression Results.*

MANOVA: Examining the effects of witnessing coworker voice on voice self-efficacy and instrumentality beliefs

Source	Dependent Variable	Type III Sum of Squares	DF	Mean Square	F	Sig.
Corrected Model	VSE	23.55	3	7.85	12.55	.00**
	VIN	16.91	3	5.64	9.59	.00**
Intercept	VSE	10821.64	1	10821.64	17305.39	.00**
	VIN	10381.42	1	10381.42	17657.86	.00**
Control variable: CW (-1 = low, 1 = high)	VSE	5.62	1	5.62	8.99	.00**
	VIN	0.33	1	0.33	0.56	.46
Control variable: CC (-1 = low, 1 = high)	VSE	0.02	1	0.02	0.03	.87
	VIN	0.32	1	0.32	0.54	.46
Witnessing coworker voice (-1 = no, 1 = yes)	VSE	18.00	1	18.00	28.79	.00**
	(3.88 vs. 4.21)					
	VIN	16.28	1	16.28	27.70	.00**
	(3.81 vs. 4.12)					
Error	VSE	410.84	657	0.63		
	VIN	386.26	657	0.59		
Total	VSE	11245.28	661			
	VIN	10775.36	661			

Table III. *Continued.*

Regression: Examining the effects of voice self-efficacy and instrumentality beliefs on self-rated voice propensity

Source	Unstandardized coefficients	Standard error	Standardized coefficient	T-value	Sig.
Constant	1.22	.14		8.92	.00**
Control variable: CW	-.02	.02	-.03	-1.01	.31
Control variable: CC	-.03	.02	-.04	-1.40	.16
VSE	.35	.03	.37	11.09	.00**
VIN	.40	.03	.40	12.29	.00**

Note. $N = 661$; $^{**}p < .01$; $^{*}p < .05$; CW = coworker warmth; CC = coworker competence; VSE = voice self-efficacy beliefs; VIN = voice instrumentality beliefs.

Table IV. *Mediation Relationships.*

Mediation relationship	Indirect effect	95% CI
Study 1A		
Witnessing voice → voice self-efficacy beliefs → self-rated voice	.058*	[.036, .086]
Witnessing voice → voice instrumentality beliefs → self-rated voice	.065*	[.039, .089]
Study 1B		
Witnessing voice → voice self-efficacy beliefs → recalled voice	.070*	[.023, .118]
Witnessing voice → voice self-efficacy beliefs → predicted voice	.053*	[.017, .091]
Witnessing voice → voice instrumentality beliefs → recalled voice	.014*	[.000, .034]
Witnessing voice → voice instrumentality beliefs → predicted voice	.018*	[.000, .042]
Study 2		
Witnessing voice → voice self-efficacy beliefs → coworker-rated voice	.026*	[.006, .058]
Witnessing voice → voice instrumentality beliefs → coworker-rated voice	.027*	[.002, .061]

Note. * significant based on 95% confidence intervals; all effect sizes represent unstandardized estimates; CI = confidence intervals.

Table V. *Study 1B: Means, Standard Deviations, and Correlations among Variables.*

	1	2	3	4	5	6	7
1. Witnessing coworker voice (-1 = no, 1 = yes)	--						
2. Voice self-efficacy beliefs	.19**	(.93)					
3. Voice instrumentality beliefs	.05	.20**	(.92)				
4. Recalled voice	.06	.55**	.26**	(.94)			
5. Predicted voice	.09*	.48**	.31**	.59**	(.94)		
6. Control variable: coworker warmth	.36**	.21**	.02	.07	.15**	(.89)	
7. Control variable: coworker competence	.37**	.11*	-.15*	-.07	.07	.68**	(.96)
Mean	0.01	3.87	3.16	3.34	3.72	3.57	4.12
SD	1.00	0.89	1.03	1.10	0.94	0.88	0.92

Note. $N = 548$; $^{**}p < .01$; $^{*}p < .05$; coefficient alphas are provided in parentheses.

Table VI. *Study 1B: Multivariate Analysis of Variance (MANOVA) and Regression Results.*

Examining the effects of witnessing coworker voice on voice self-efficacy and instrumentality beliefs

Source	Dependent Variable	Type III Sum of Squares	DF	Mean Square	F	Sig.
Corrected Model	VSE	26.91	3	8.97	12.09	.00**
	VIN	33.99	3	11.33	11.33	.00**
Intercept	VSE	239.96	1	239.96	323.37	.00**
	VIN	288.53	1	288.53	288.58	.00**
Control variable: CW	VSE	10.89	1	10.89	14.68	.00**
	VIN	13.48	1	13.48	13.48	.00**
Control variable: CC	VSE	2.02	1	2.02	2.72	.10
	VIN	32.36	1	32.36	32.36	.00**
Witnessing coworker voice (-1 = no, 1 = yes)	VSE	7.60	1	7.60	10.24	.00**
	(3.70 vs. 4.03)					
	VIN	4.61	1	4.61	4.61	.03*
	(3.10 vs. 3.21)					
Error	VSE	403.68	544	0.74		
	VIN	543.92	544	1.00		
Total	VSE	8618.12	548			
	VIN	6036.88	548			

Table VI. *Continued.*

Regression: Examining the effects of voice self-efficacy and instrumentality beliefs on recalled voice

Source	Unstandardized coefficients	Standard error	Standardized coefficient	T-value	Sig.
Constant	.84	.26		3.27	.00**
Control variable: CW	.07	.06	.06	1.21	.23
Control variable: CC	-.18	.06	-.15	-3.06	.00**
VSE	.65	.05	.53	14.47	.00**
VIN	.14	.04	.14	3.71	.00**

Regression: Examining the effects of voice self-efficacy and instrumentality beliefs on predicted voice

Source	Unstandardized coefficients	Standard error	Standardized coefficient	T-value	Sig.
Constant	1.04	.23		4.55	.00**
Control variable: CW	.03	.05	.03	0.52	.61
Control variable: CC	.04	.05	.04	0.76	.45
VSE	.45	.04	.43	11.31	.00**
VIN	.21	.04	.24	6.20	.00**

Note. $N = 548$; **$p < .01$; *$p < .05$; CW = coworker warmth; CC = coworker competence; VSE = voice self-efficacy beliefs; VIN = voice instrumentality beliefs.

Table VII. *Study 3: Means, Standard Deviations, and Correlations among Variables.*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. E's witnessing coworker voice	(.94)													
2. E's voice self-efficacy beliefs	.36**	(.89)												
3. E's voice instrumentality beliefs	.30**	.31**	(.89)											
4. E's voice (rated by coworkers)	.16**	.24**	.14**	(.95)										
Control variables:														
5. E's coworker warmth	.50**	.31**	.12**	.15**	(.85)									
6. E's coworker competence	.29**	.15**	-.00	.05	.48**	(.94)								
7. E's perceived voice climate	.32**	.35**	.40**	.08	.18**	.12**	(.89)							
8. E's perceived competitive climate	.04	-.01	.25**	-.04	.02	-.07	-.03	(.93)						
9. E's gender (female)	.05	-.10*	.05	-.01	.14**	.17**	.01	.05	--					
10. E's age	.05	.24**	.05	.10*	-.07	-.01	.08	-.03	-.13**	--				
11. E's organizational tenure	.07	.21**	.04	.06	-.02	-.00	.00	.02	-.14**	.65**	--			
12. E's job tenure	.01	.14**	-.01	.09*	-.08	.00	-.03	-.05	-.11**	.67**	.74**	--		
13. E's job level	.07	.12**	.03	.01	.03	-.02	-.01	.03	-.16**	.13**	.17**	.06	--	
14. E's education level	-.05	-.26**	-.06	-.17**	.06	.02	-.19**	.12**	.16**	-.41**	-.30**	-.46**	.06	--
Mean	3.32	3.49	2.93	3.36	3.80	4.17	3.48	2.88	1.55	2.32	2.42	2.36	1.26	4.90
SD	0.86	0.70	0.85	0.87	0.59	0.76	0.74	0.88	0.50	1.61	1.29	1.29	0.62	1.60

Note. $N = 549$; [**]$p < .01$; [*]$p < .05$; E = the focal employee; coefficient alphas are provided in parentheses.

Table VIII. *Study 3: Standardized Path Coefficients.*

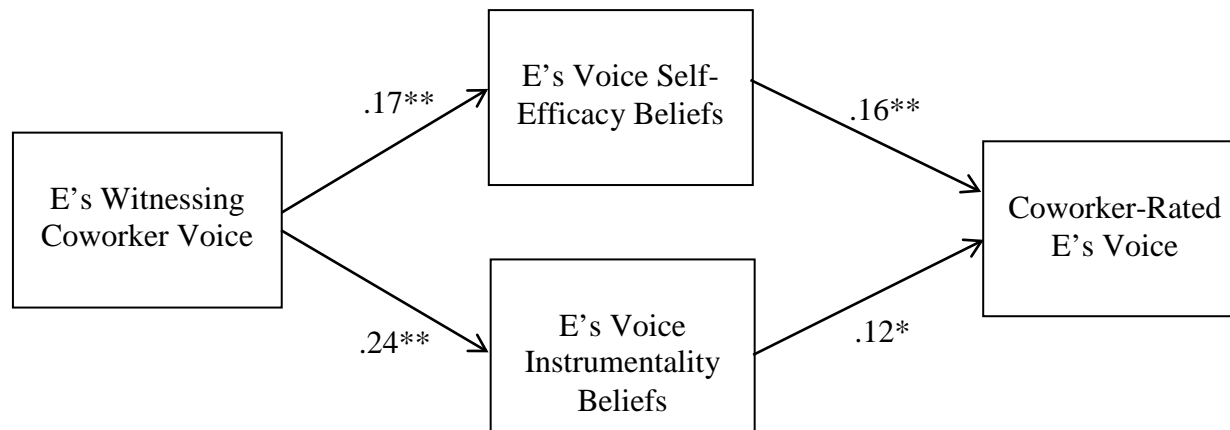|	Dependent variables		
	Voice self-efficacy beliefs	Voice instrumentality beliefs	Coworker-rated voice
Predictor variables			
Witnessing coworker voice	**.17****	**.24****	
Voice self-efficacy beliefs			**.16****
Voice instrumentality beliefs			**.12***
Control variables			
Coworker warmth	.28**	-.02	.15**
Coworker competence	-.04	-.11*	-.05
Perceived voice climate	.23**	.37**	-.08
Perceived competitive climate	-.00	.26**	-.05
Gender (female)	-.09*	.06	.02
Age	.13*	.01	.04
Organizational tenure	.13*	.04	-.08
Job tenure	-.11	-.02	.05
Job level	.08	.01	-.00
Education level	-.20**	-.02	-.13*
Total explained variance	30%	25%	10%
Other estimates of interest			
Corr (witnessing coworker voice, coworker warmth)	.54**		
Corr (witnessing coworker voice, coworker competence)	.32**		
Corr (coworker warmth, coworker competence)	.53**		

Note. N = 549; ** *p* < .01; * *p* < .05. Corr = the estimated correlation among exogenous variables. Values in bold represent hypothesized effects.

Figure 1. *Proposed Theoretical Model*
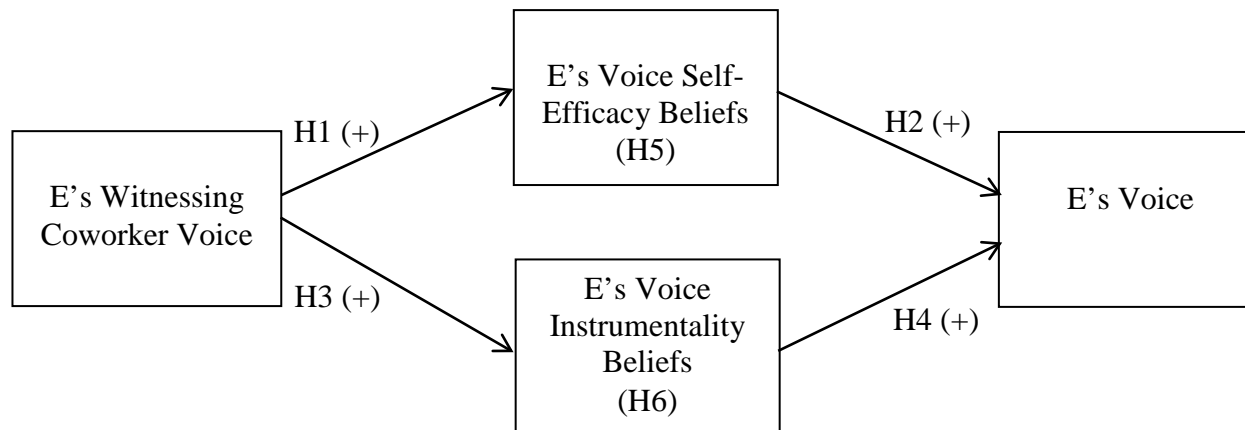
Note. E = the focal employee; H = hypothesis.

Figure 2. *Study 2: Standardized Parameter Estimates.*

Appendix A
Study 1A: Experimental Scenarios

1. Witnessing voice, high coworker warmth, high coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

However, your division has recently found that the container production process could potentially be slowed down if the stable supply of a special polypropylene material is not maintained during the production cycles. Soon after your division found this potential production issue, there came the routine monthly product development meeting with the management team. You and your coworker Bryan attended the meeting on behalf of the R&D division.

Bryan is a good friend of yours. Your relationship with him is characterized by a high level of mutual trust, strong emotional investments in the relationship, willingness to do anything for each other, and a sense of interdependence. Overall, you feel psychologically close to Bryan. In addition, you believe that Bryan is a highly competent person who possesses the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is a close and competent coworker.

In the meeting, Bryan voiced several constructive suggestions to the management team about how to proactively deal with this potential production issue. Specifically, Bryan suggested that the company should (1) replacing polypropylene with a substitute that functions exactly the same way but turns the color of the container slightly more dull, (2) resorting back to the material that was used before polypropylene appeared, although that material does not reflect the latest technology in the industry, (3) reducing the percentage of polypropylene relative to other ingredients, a solution which would increase the weight of the container slightly, and (4) mimicking the raw material that smaller and less competitive firms have been using, and relying on that less-in-demand material in the long run.

2. Witnessing voice, high coworker warmth, low coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

However, your division has recently found that the container production process could potentially be slowed down if the stable supply of a special polypropylene material is not maintained during the production cycles. Soon after your division found this potential production issue, there came the routine monthly product development meeting with the management team. You and your coworker Bryan attended the meeting on behalf of the R&D division.

Bryan is a good friend of yours. Your relationship with him is characterized by a high level of mutual trust, strong emotional investments in the relationship, willingness to do anything for

each other, and a sense of interdependence. Overall, you feel psychologically close to Bryan. Meanwhile, you believe that Bryan is not very competent; you think that he does not fully possess the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is a close but incompetent coworker.

In the meeting, Bryan voiced several constructive suggestions to the management team about how to proactively deal with this potential production issue. Specifically, Bryan suggested that the company should (1) replacing polypropylene with a substitute that functions exactly the same way but turns the color of the container slightly more dull, (2) resorting back to the material that was used before polypropylene appeared, although that material does not reflect the latest technology in the industry, (3) reducing the percentage of polypropylene relative to other ingredients, a solution which would increase the weight of the container slightly, and (4) mimicking the raw material that smaller and less competitive firms have been using, and relying on that less-in-demand material in the long run.

3. Witnessing voice, low coworker warmth, high coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

However, your division has recently found that the container production process could potentially be slowed down if the stable supply of a special polypropylene material is not maintained during the production cycles. Soon after your division found this potential production issue, there came the routine monthly product development meeting with the management team. You and your coworker Bryan attended the meeting on behalf of the R&D division.

Bryan is an ordinary coworker of yours. Your relationship with him is characterized by little mutual trust, limited emotional investments in the relationship, clearly counting of favors and obligations, and a sense of independence and separation. Overall, you do not feel psychologically close to Bryan. Despite this, you believe that Bryan is a highly competent person who possesses the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is a competent acquaintance at work.

In the meeting, Bryan voiced several constructive suggestions to the management team about how to proactively deal with this potential production issue. Specifically, Bryan suggested that the company should (1) replacing polypropylene with a substitute that functions exactly the same way but turns the color of the container slightly more dull, (2) resorting back to the material that was used before polypropylene appeared, although that material does not reflect the latest technology in the industry, (3) reducing the percentage of polypropylene relative to other ingredients, a solution which would increase the weight of the container slightly, and (4) mimicking the raw material that smaller and less competitive firms have been using, and relying on that less-in-demand material in the long run.

4. Witnessing voice, low coworker warmth, low coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a

firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

However, your division has recently found that the container production process could potentially be slowed down if the stable supply of a special polypropylene material is not maintained during the production cycles. Soon after your division found this potential production issue, there came the routine monthly product development meeting with the management team. You and your coworker Bryan attended the meeting on behalf of the R&D division.

Bryan is an ordinary coworker of yours. Your relationship with him is characterized by little mutual trust, limited emotional investments in the relationship, clearly counting of favors and obligations, and a sense of independence and separation. Overall, you do not feel psychologically close to Bryan. In addition, you believe that Bryan is not very competent; you think that he does not fully possess the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is an incompetent acquaintance at work.

In the meeting, Bryan voiced several constructive suggestions to the management team about how to proactively deal with this potential production issue. Specifically, Bryan suggested that the company should (1) replacing polypropylene with a substitute that functions exactly the same way but turns the color of the container slightly more dull, (2) resorting back to the material that was used before polypropylene appeared, although that material does not reflect the latest technology in the industry, (3) reducing the percentage of polypropylene relative to other ingredients, a solution which would increase the weight of the container slightly, and (4) mimicking the raw material that smaller and less competitive firms have been using, and relying on that less-in-demand material in the long run.

5. Not witnessing voice, high coworker warmth, high coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

However, your division has recently found that the container production process could potentially be slowed down if the stable supply of a special polypropylene material is not maintained during the production cycles. Soon after your division found this potential production issue, there came the routine monthly product development meeting with the management team. You and your coworker Bryan attended the meeting on behalf of the R&D division.

Bryan is a good friend of yours. Your relationship with him is characterized by a high level of mutual trust, strong emotional investments in the relationship, willingness to do anything for each other, and a sense of interdependence. Overall, you feel psychologically close to Bryan. In addition, you believe that Bryan is a highly competent person who possesses the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is a close and competent coworker.

In the meeting, the management team went through some routine production reports and statistics. No colleagues from other divisions made suggestions and comments to the management team. Your coworker Bryan also remained silent.

6. Not witnessing voice, high coworker warmth, low coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

However, your division has recently found that the container production process could potentially be slowed down if the stable supply of a special polypropylene material is not maintained during the production cycles. Soon after your division found this potential production issue, there came the routine monthly product development meeting with the management team. You and your coworker Bryan attended the meeting on behalf of the R&D division.

Bryan is a good friend of yours. Your relationship with him is characterized by a high level of mutual trust, strong emotional investments in the relationship, willingness to do anything for each other, and a sense of interdependence. Overall, you feel psychologically close to Bryan. Meanwhile, you believe that Bryan is not very competent; you think that he does not fully possess the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is a close but incompetent coworker.

In the meeting, the management team went through some routine production reports and statistics. No colleagues from other divisions made suggestions and comments to the management team. Your coworker Bryan also remained silent.

7. Not witnessing voice, low coworker warmth, high coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

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Bryan is an ordinary coworker of yours. Your relationship with him is characterized by little mutual trust, limited emotional investments in the relationship, clearly counting of favors and obligations, and a sense of independence and separation. Overall, you do not feel psychologically close to Bryan. Despite this, you believe that Bryan is a highly competent person who possesses the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is a competent acquaintance at work.

In the meeting, the management team went through some routine production reports and statistics. No colleagues from other divisions made suggestions and comments to the management team. Your coworker Bryan also remained silent.

8. Not witnessing voice, low coworker warmth, low coworker competence

Imagine you are an employee who works for the Research and Development (R&D) division of a firm that manufactures food containers. Your firm has been developing a container that is lighter and can keep temperature for longer than most other existing products. This new product is likely to become very popular once it is brought to the market.

However, your division has recently found that the container production process could potentially be slowed down if the stable supply of a special polypropylene material is not maintained during the production cycles. Soon after your division found this potential production issue, there came the routine monthly product development meeting with the management team. You and your coworker Bryan attended the meeting on behalf of the R&D division.

Bryan is an ordinary coworker of yours. Your relationship with him is characterized by little mutual trust, limited emotional investments in the relationship, clearly counting of favors and obligations, and a sense of independence and separation. Overall, you do not feel psychologically close to Bryan. In addition, you believe that Bryan is not very competent; you think that he does not fully possess the knowledge, skills, and abilities needed to effectively perform his work role. In brief, in your eyes, Bryan is an incompetent acquaintance at work.

In the meeting, the management team went through some routine production reports and statistics. No colleagues from other divisions made suggestions and comments to the management team. Your coworker Bryan also remained silent.

Measures

Witnessing voice manipulation check
Bryan suggested changes to cope with the production problem.
Bryan made suggestions about how to overcome the challenge.
Bryan spoke up with recommendations about how to fix the production issue.

Coworker warmth manipulation check
Bryan is a good friend of mine.
Bryan understands my job problems and needs.
Bryan would "bail me out" at his own expense.

Coworker competence manipulation check
1. Bryan can adequately complete his assigned duties.
2. Bryan can competently fulfill his responsibilities.
3. Bryan satisfactorily meets performance requirements of the job.

Voice self-efficacy beliefs
I am confident about my ability to speak up with constructive suggestions in this company.
I feel that I am good at voicing constructive suggestions to my colleagues in this company.

I feel that I am qualified to make useful suggestions at work.
I feel self-assured about my capabilities to voice my opinion about work activities in this company.
I feel that I have enough skills and experience to voice my opinion in this company.

Voice instrumentality beliefs
I believe that my chance of promotion in this company will be higher if I make more constructive suggestions.
I believe that my job security in this company will be enhanced if I make more constructive suggestions.
I believe that my salary and benefits in this company will increase if I make more constructive suggestions.
I feel that the resource and reward allocation in this company is partly based on an employee's tendency to speak up with constructive suggestions.
I feel that employees who speak up with more constructive suggestions in this company will eventually get better performance appraisal scores.

Voice propensity
In the current and upcoming product development meetings....
....I think I will suggest changes to work projects in order to make them better.
....I think I will make suggestions about how to do things in new or more effective ways at work.
....I think I will speak up with recommendations about how to fix work-related problems.
....I think I will make suggestions about how to improve work methods or practices.
....I think I will propose ideas for new or more effective work methods.

Appendix B
Study 1B: Experimental Scenarios

1. Witnessing voice

Please recall a past work meeting which both you and a coworker of yours had attended and, importantly, the coworker took the initiative to make some constructive suggestions about work to other attendees in the meeting. In other words, think of a past meeting in which you had witnessed a coworker speak out to other attendees with well-intended work recommendations, whenever such opportunities arose. Are you able to recall such a meeting? (Those who answered "no" were screened out.)

Now, please take a moment to describe this situation in which you saw your coworker speak up in a work meeting with well-intended and constructive suggestions — what happened, how you felt, etc.

2. Not witnessing voice

Please recall a past work meeting which both you and a coworker of yours had attended and, importantly, the coworker did not take the initiative to speak out to other attendees in the meeting. In other words, think of a past meeting in which you had witnessed a coworker remain silent during the meeting, even when opportunities to speak out arose. Are you able to recall such a meeting? (Those who answered "no" were screened out.)

Now, please take a moment to describe this situation in which you saw your coworker remain silent in a work meeting and did not make any suggestions — what happened, how you felt, etc.

Measures

Manipulation check
In the meeting I recalled, I witnessed my coworker make suggestions.
In the meeting I recalled, I witnessed my coworker speak up with recommendations.
In the meeting I recalled, I witnessed my coworker actively propose improvement-oriented ideas.

Coworker warmth
Think of the coworker you recalled. How was your relationship with him/her in general?

I frequently knew how satisfied this coworker was with the tasks I did at work.
This coworker understood my job problems and needs.
This coworker would use his/her power to help me solve problems in my work.
This coworker would "bail me out" at his/her own expense.
I had enough confidence in this coworker that I would defend and justify his/her decision if he/she were not present to do so.
I had an effective working relationship with this coworker.

Coworker competence
Think of that coworker again. What do you think of his/her work abilities in general?

This coworker adequately completed his/her assigned duties.
This coworker completed job assignments on time.
This coworker competently fulfilled his/her responsibilities.
This coworker effectively performed tasks that were expected of him/her.
This coworker satisfactorily met performance requirements of the job.

Voice self-efficacy
Think of that meeting again. How did you feel about the following after witnessing your coworker's behavior?

I felt confident about my ability to speak up with constructive suggestions.
I felt that I was good at voicing constructive suggestions.
I felt that I was qualified to make useful suggestions.
I felt self-assured about my capabilities to voice my opinion about work activities.
I felt that I had enough skills and experience to voice my opinion at work.

Perceived voice instrumentality
Think of that meeting again. How did you feel about the following after witnessing your coworker's behavior?

I believed that my chance of promotion would be higher if I made more constructive suggestions.
I believed that my job security would be enhanced if I made more constructive suggestions.
I believed that my salary and benefits would increase if I made more constructive suggestions.
I felt that the resource and reward allocation was partly based on an employee's tendency to speak up with constructive suggestions.
I felt that employees who spoke up with more constructive suggestions would eventually get better performance appraisal scores.

Recalled voice
In the meeting you recalled, to what extent did you speak out in that meeting after witnessing your coworker's behavior?

I suggested changes to work projects in order to make them better.
I made suggestions about how to do things in new or more effective ways at work.
I spoke up with recommendations about how to fix work-related problems.
I made suggestions about how to improve work methods or practices.
I proposed ideas for new or more effective work methods.

Predicted voice
Now, think of your current job. Imagine that there is an upcoming work meeting that you will attend next week. How likely would you want to speak out in that meeting about the following areas?

I think I will suggest changes to work projects in order to make them better.
I think I will make suggestions about how to do things in new or more effective ways at work.
I think I will speak up with recommendations about how to fix work-related problems.
I think I will make suggestions about how to improve work methods or practices.
I think I will propose ideas for new or more effective work methods.