

AN APPROACH-INHIBITION MODEL OF EMPLOYEE SILENCE: THE JOINT EFFECTS OF PERSONAL SENSE OF POWER AND TARGET OPENNESS

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When employees consciously withhold potentially important suggestions or concerns from those who may be able to act on that information, it can have serious implications for organizational performance. Yet there is research suggesting that, when faced with the choice of whether or not to raise an issue, employees often choose to remain silent. Our objective in this paper is to expand current theoretical understanding of why employees often remain silent and of situational factors that can lessen this tendency. Drawing on the approach-inhibition theory of power, we argue that an employee's personal sense that he or she is lacking in power in relation to others at work is a key factor contributing to the decision to remain silent but that this effect is moderated by perceived target openness. We took a multimethod approach, testing these relationships across 3 studies: a laboratory experiment, a survey study of healthcare workers, and a survey study of employees working across a wide range of industries. Our findings suggest that, although silence is indeed rooted in the psychological experience of powerlessness, perceived target openness mitigates this relationship, encouraging employee to speak up when they would not otherwise do so.

Within organizations, it is common for employees to remain silent about important issues that they encounter. One investigation found that 70% of employees reported feeling afraid to speak up about issues and problems at work (Ryan & Oestreich, 1991), and in another, 85% of professional and managerial employees could recall a recent situation

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where they had failed to speak up about something of concern (Milliken, Morrison, & Hewlin, 2003). Similarly, in a recent polling of department chairs in medical schools, 69% reported that it was common or widespread in their organization for people to not raise or talk about important problems (Souba, Way, Lucey, Sedmak, & Notestine, 2011). Employee silence, defined as conscious withholding of potentially important information, suggestions, or concerns, from those who might be able to act on that information (Tangirala & Ramanujam, 2008a; Van Dyne, Ang, & Botero, 2003), is not just common, but it can have highly dysfunctional effects. When employees fail to speak up when they have input or concerns, their supervisors may not have the information that they need to correct problems. Indeed, they may not even be aware that problems exist (Morrison & Milliken, 2000). Employee silence has been implicated as a contributor to a host of detrimental outcomes, including weak performance, corruption, low employee morale, patient deaths in hospitals, and accidents (Greenberg & Edwards, 2009).

The objective of this paper is to expand our theoretical understanding of why employees often remain silent and of how this tendency might be mitigated. Drawing from the approach-inhibition theory of power (Keltner, Gruenfeld, & Anderson, 2003), we propose that a critical factor at the root of an employee's decision to withhold input about work-related problems is the employee's sense that he or she is lacking in power in relation to others. Moreover, integrating this same theoretical framework with the literature on employee voice, we propose that the effect of power on silence will be sensitive to contextual variables. Specifically, we examine the moderating effect of perceived target openness and argue that the effect of powerlessness on silence will be attenuated when the voice target is seen as open to input. To examine these relationships, we conducted three studies: a laboratory experiment, a survey study of healthcare professionals in a large multioffice medical practice, and a survey study of employees working across a wide range of professions and industries.

Our paper makes several theoretical and empirical contributions. First, we contribute to the body of research examining the underpinnings of voice and silence. By focusing on a factor that is pervasive and fundamental to social relationships—one's personal sense of power (Anderson, John, & Keltner, 2012; Keltner et al., 2003)—this investigation expands our theoretical understanding of when and why employees often choose to withhold information about problems or concerns at work. Moreover, by considering the compensatory effect of target openness, our examination provides insight into what might be done to attenuate the effect of powerlessness on silence, thereby encouraging more employee voice behavior. Our work also makes an empirical contribution to the voice and silence literature by taking a multimethod approach that includes a

laboratory investigation in which we were able to directly observe whether or not individuals spoke up when faced with a problem. To our awareness, ours is the first direct empirical investigation observing this behavioral choice.

In addition to its contributions to the literature on voice and silence, our investigation contributes to the stream of research on the psychological sense of power and its interaction with situational factors (e.g., Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008). Extending theoretical and empirical investigations suggesting that low-power individuals are more sensitive to situational factors than high-power individuals (Galinsky et al., 2008), we examine whether perceived target openness will serve as a situational cue that moderates the inhibiting effect of low power, encouraging people to speak up when they might not otherwise do so. By investigating these joint effects, we also introduce an important work-related behavioral outcome (voice vs. silence) to the psychology literature on power (e.g., Galinsky, Rucker, & Magee, 2015; Keltner et al., 2003; Magee & Galinsky, 2008), as well as a situational factor that has not been previously examined in that literature.

Employee Silence

When an employee encounters an issue at work, he or she faces the choice of whether to remain silent about that issue or to speak up about it to someone who might be able to address the situation. *Employee silence* occurs when employees fail to speak up when they have concerns, information about problems, suggestions for improvement, or divergent points of view (Morrison & Milliken, 2000; Pinder & Harlos, 2001). To date, there have been only a handful of studies focused specifically on the question of why employees sometimes choose to remain silent about potentially important issues and concerns. The key findings from these studies is that silence stems from fears and implicit theories about the risks of speaking up (Detert & Edmondson, 2011; Milliken et al., 2003). In addition, in a cross-level investigation of employee silence, Tangirala and Ramanujam (2008a) found that when strongly identified or committed employees perceived a strong procedural justice climate, they were less likely to report having engaged in silence.

Alongside these studies on employee silence exists a large body of research on employee voice behavior, where voice is defined as discretionary communication of ideas, suggestions, concerns, or information about problems to a person or persons who might be able to take appropriate action (Detert & Burris, 2007; Morrison, 2011; Van Dyne & LePine, 1998). The voice literature emphasizes two key judgments that underlie

the decision of whether to speak up at work: the belief that voicing will be effective and the belief that voicing is safe—that one will not suffer negative consequences. Empirical research has identified numerous factors that predict the frequency with which employees display voice behavior, presumably by affecting these two judgments. These include dispositions such as proactive personality and conscientiousness, work-related attitudes and perceptions such as job satisfaction and leader–member exchange, and contextual factors such as voice climate (for detailed reviews of the voice literature, see Klaas, Olson-Buchanan, & Ward, 2012; Morrison, 2011, 2014).

As argued elsewhere (e.g., Morrison, 2014), it generally makes sense to conceptualize voice and silence as opposite choices or, in the aggregate, as opposite ends of a continuum. If an employee has an idea, or is aware of a problem, he or she can either speak up (voice) or withhold that information (silence), with more voice generally implying less silence. This suggests that many of the factors that have been shown to predict voice should also predict silence. However, there are two important measurement issues that make it necessary to exercise caution in drawing conclusions about the choice to remain silent from existing empirical research on voice.

First, studies of voice have focused primarily on whether employees speak up with useful ideas and suggestions (e.g., Detert & Burris, 2007; Van Dyne & LePine, 1998), or what is known as promotive voice (Liang, Fahr, & Fahr, 2012). The silence literature, on the other hand, is largely focused on the failure to speak up about *problems and concerns* (Milliken et al., 2003; Tangirala & Ramanujam, 2008a), or what is known as prohibitive voice (Liang et al., 2012). The latter behavior is generally regarded as more risky, and Liang et al. (2012) found that variables most strongly predictive of promotive voice are less predictive of prohibitive voice. This suggests that prior findings on what drives the voicing of constructive suggestions may not necessarily generalize to voicing (or silence) about problems or concerns.

Second, the scales that have been used to measure voice and silence are not directly comparable. In voice studies, a supervisor typically reports how often, in general, a particular employee speaks up with suggestions and ideas (e.g., Detert & Burris, 2007; Tangirala & Ramanujam, 2012). The higher the score on this scale, the more the employee is exhibiting voice. Where there is ambiguity, however, is at the low end of the scale. A low voice score *could* mean that the employee is remaining silent, that he or she has ideas and suggestions but is intentionally withholding them. However, a low score on a voice scale could instead mean that the employee simply does not have any ideas or suggestions to share. The issue is that we do not know from these typical voice measures whether

the employee has something to share or not, and thus such studies on voice do not necessarily speak to the issue of what drives the conscious choice to remain silent. In contrast to how voice has been measured, the few existing studies on employee silence (e.g., Detert & Edmondson, 2011; Tangirala & Ramanujam, 2008a) have explicitly asked employees whether they are consciously withholding information. This is the approach that we take in our study, given our specific interest in understanding the decision to not share potentially important information.

Personal Sense of Power

Power is classically defined as an individual's capacity to influence other people, typically as a function of the individual's ability to provide or withhold something that other people value (Emerson, 1962; French & Raven, 1959). However, it has been argued by social psychologists that power can also be viewed and studied as the psychological state that occurs when a person perceives that he or she is capable of influencing others (Anderson et al., 2012; Galinsky, Gruenfeld, & Magee, 2003; Magee & Galinsky, 2008). The term that has been developed for this psychological state is *personal sense of power*, defined as the perception of one's ability to influence another person or other people (Anderson et al., 2012). Unlike control at work or job autonomy, which reflects an employee's perceived ability to influence his or her own work behaviors and outcomes (Brockner et al., 2004; Tangirala & Ramanujam, 2008b), sense of power is inherently a social-relational concept: It reflects influence over other individuals' attitudes, behaviors, and outcomes and can be understood only in relation to other individuals (Anderson et al., 2012; Emerson, 1962). It also is not a stable trait and has been shown to vary across contexts and relationships. For example, an individual's sense of power with respect to his or her work colleagues may be very different from his or her sense of power with respect to friends outside of work (Anderson et al., 2012).

The past decade has seen a large number of studies examining how such personal sense of power influences cognition and behavior (e.g., Galinsky et al., 2003; Galinsky, Magee, Inesi, & Gruenfeld, 2006; Galinsky et al., 2015). These studies have shown that a high personal sense of power has effects similar to the effects of objectively possessing sources of power, such as resource control or formal authority. Similarly, studies have shown that individuals with a lower personal sense of power behave in ways quite similar to those who lack objective sources of power (e.g., Anderson & Galinsky, 2006; Fast, Gruenfeld, Sivanathan, & Galinsky, 2009; Fast, Sivanathan, Mayer, & Galinsky, 2012; Galinsky et al., 2003; Guinote, 2007).

The Relationship Between Personal Sense of Power and Silence

Despite the ubiquity of power dynamics in the workplace, an employee's sense of power has received relatively little attention in the literature on employee voice and silence. The closest is research on how offering recommendations and ideas for change relates to perceptions of autonomy and personal control (Tangirala & Ramanujam, 2008b). For example, Tangirala and Ramanujam (2008b) found a curvilinear relationship between voice and employees' perceptions of control over their own work-related behaviors and outcomes. However, researchers have not considered how voice or silence relate to perceptions of interpersonal power (i.e., power in relation to other people at work or influence over *others'* work-related behaviors and outcomes). This is somewhat surprising given the fact that speaking up in the workplace is inherently a form of social influence. That is to say, employees typically engage in voice in order to influence the message target to take some sort of action (Morrison, 2014).

A useful theoretical framework for understanding the potential relationship between personal sense of power and silence is the approach-inhibition theory of power (Keltner et al., 2003). This theory explains how the psychological experience of possessing or not possessing power over others affects emotions, cognition, and behavior. The core argument is that elevated power activates processes associated with the behavioral approach system (e.g., attention to rewards, confidence, positive emotions, disinhibited behavior), whereas lack of power activates processes associated with the behavioral inhibition system (e.g., attention to risk or threats, reduced confidence, anxiety and other negative emotions, inhibited social behavior). Drawing on this theoretical paradigm, we suggest that employees who feel lacking in power in relation to their work colleagues will be much more likely to remain silent in the face of issues or concerns than will employees who feel powerful.

There are several interrelated theoretical mechanisms that might underlie the proposed relationship between power and silence. First, by activating the behavioral inhibition system, a state of low power leads to diminished optimism and confidence (Anderson & Galinsky, 2006; Fast et al., 2012; See, Morrison, Rothman, & Soll, 2011). Lack of optimism and confidence, in turn, should likely reduce an employee's voice efficacy. Voice efficacy is an employee's belief that speaking up will make a difference and is a necessary condition for voice; if it is low, employees will tend to remain silent (Detert & Trevino, 2010; Milliken et al., 2003). Second, when the behavioral inhibition system is activated, individuals are more likely to perceive and attend to threats and risks (Anderson & Berdahl, 2002; Anderson & Galinsky, 2006; Keltner et al., 2003). As a result, they should be more likely to focus on the risky elements of voice relative to

the potential benefits. As highlighted in several studies, perceptions that voice is risky increase the tendency to remain silent (Detert & Trevino, 2010; Milliken et al., 2003). Third, activation of the behavioral inhibition system means a reduction in goal-directed behavior, greater reticence, and less assertiveness (Keltner et al., 2003). Consistent with this idea, studies have shown that low-power individuals tend to constrict their posture and physical gestures, inhibit their emotional and attitudinal expression, speak more quietly, and interrupt less often than high-power individuals (e.g., Anderson & Berdahl, 2002; Hall, Coats, & Smith LeBeau, 2005; Tost, Gino, & Larrick, 2013). Taken together, we hypothesize the following:

Hypothesis 1: Personal sense of power will be negatively related to silence, such that individuals will be more likely to remain silent when their personal sense of power is low.

The Moderating Effect of Target Openness

Hierarchy, and associated differences in power, are inherent features of organizational life (Magee & Galinsky, 2008), which suggests that it may be inevitable for employees to sometimes feel a sense of powerlessness and thus be inhibited from speaking up even when they have important information. Indeed, there may be many situations where there are limits to how much can be done to reduce the sense of powerlessness among employees, which can lead to silence and its associated negative consequences. Research in the tradition of the approach-inhibition theory of power (Keltner et al., 2003), however, suggests that perceived and objective contextual factors can moderate the effects of power and, specifically, that people experiencing a state of low power are more sensitive to such contextual factors than those who feel more powerful (Galinsky et al., 2008). It would therefore be valuable, both theoretically and practically, to identify situational cues that might mitigate the detrimental effects of low personal sense of power on the motivation to speak up about issues of concern.

Integrating the approach-inhibition theory of power with research on employee voice, we argue that target openness is one such contextual variable that could moderate the link between power and silence. Target openness refers to perceptions about whether or not the potential message recipient (e.g., one's supervisor) is approachable, interested in input from others, and willing to give fair consideration to ideas and suggestions (Detert & Burris, 2007). Studies have shown that employees engage in more voice behavior when they perceive their supervisor to be open to

input (Detert & Burris, 2007; Saunders, Shepard, Knight, & Roth, 1992), implying that they will be more likely to remain silent when they do not perceive their supervisor to be open.

Extending beyond this main effect finding from past research (Detert & Burris, 2007), we argue that perceived target openness can also act as a moderator of the relationship between personal sense of power and silence, such that when an employee believes that a potential voice target is open to input, the relationship between power and silence will be attenuated. Our line of reasoning again follows from the approach-inhibition theory of power (Keltner et al., 2003). Galinsky et al. (2008) argued that, because individuals who feel powerful are oriented toward approach or action, and thus focused on goal pursuit, they are less attentive to contextual and situational information. As a result, their behavior is more a function of intrapsychic processes and states, and less a function of situational factors such as, in this case, the openness of their supervisor. Conversely, individuals who feel less powerful are more attuned and responsive to contextual factors, particularly those that signal risk or lack thereof. Thus, for employees with a low sense of power, target openness should act as a situational cue that essentially compensates for the inhibiting effect of powerlessness. As discussed in the arguments for Hypothesis 1, employees who feel that they lack power may be reluctant to speak up due to concerns about risk and the belief that voice will not make a difference, which are likely to be more salient concerns for those experiencing a state of low power (e.g., Anderson & Galinsky, 2006; Morrison & Rothman, 2009). Perceived target openness, however, should help employees to feel that it is safe and worthwhile to speak up even if they do not feel very powerful. This leads to the prediction that the effect of powerlessness on silence should be weaker when the employee perceives the target to be open to input:

Hypothesis 2: The negative relationship between personal sense of power and employee silence will be attenuated by perceived target openness.

Overview of Studies

We tested our hypotheses across three studies. The first was a laboratory study in which we manipulated participants' psychological sense of power and their perceptions of target openness, and then observed whether or not they spoke up about a known performance problem. The experimental design provided several advantages relative to the typical survey methodology used in much of the literature on voice, as well as in the

few existing survey studies of silence. First, rather than having to rely on retrospective aggregate reports, it allowed us to directly observe whether the participants voiced or not. Second, because of the way we designed the study and planted a performance problem, we were able to be confident that individuals who did not say anything were doing so because they were intentionally choosing to remain silent not because they were unaware of any problems or issues. Third, because we manipulated the two independent variables, we were able to assess causality.

To bolster the external validity of our experimental findings, we followed Study 1 with two field-based survey studies. Study 2 was a study of healthcare employees working for a large multioffice medical practice. Employees reported their sense of power, their perceptions of the supervising physician's openness, and the frequency with which they had chosen to remain silent when they had concerns or suggestions about patient care issues. Similar to Tangirala and Ramanujam (2008a), we selected a healthcare context because candid upward communication about problems is critical for reducing errors in that context (Edmondson, 2003), and yet there often exists a "code of silence" among healthcare professionals (Jones, 2003). Study 3 was then an attempt to replicate the findings from Study 2 using a more diverse sample. Three hundred and eight employees, working across a wide range of jobs and industries, completed an online survey that contained the same measures that we used in Study 2. We also included some additional variables that prior theory suggests might relate to both silence and power, and that might therefore have confounded the observed relationships found in Study 2.

Study 1

Method

Sample and design. Study 1 was a laboratory experiment. Participants were 84 undergraduate students enrolled in an introductory management course at a large private northeastern university. The experiment was conducted in the behavioral laboratory and took approximately 20 minutes. Participants received course credit for a set of tasks that took a total of 1 hour to complete. Their ages ranged from 19 to 25 (mean = 20.5), and 65.9% were male.

The study used a 2 (high power vs. low power) $\times$ 2 (target openness vs. control) between-participants design, where participants were randomly assigned to one of four conditions: high power–openness ($N = 21$), low power–openness ($N = 20$), high power–control ($N = 20$), low power–control ($N = 23$). Participants interacted in pairs, with each pair consisting

of one participant and one confederate. All participants interacted with the same confederate, who was male and blind to the research question and hypotheses.

Procedure. After arriving in the laboratory, participants were led into a room where the confederate was waiting. The experimenter explained that the study was concerned with how people work together in a business organization. Participants were told that, because in most organizations employees report to a boss, one of them would be the boss and the other would be the subordinate. The experimenter always picked the confederate to be the boss and the participant to be the subordinate. We deliberately used the terms “boss” and “subordinate” to make it salient that the situation entailed a choice of whether to engage in *upward* voice.

Next, the boss (i.e., confederate) was given a sheet of paper to read that ostensibly contained information on what makes leaders effective. As the sheet was handed to the confederate, a seemingly identical sheet was handed to the subordinate (i.e., participant) to read. The information on this sheet of paper given to the participant served as the target openness manipulation, which will be described in more detail later.

The participant was then led to another room. In this room, the participant was given written instructions pertaining to the task on which he/she would be working. Participants read that they would be working with the other person to build, within 60 seconds, the tallest tower possible from a set of 17 Tinkertoy pieces (9 rods, 5 connectors, 2 platforms, 1 plastic person). The tower needed to fulfill four characteristics: stand on its own, consist of all the available pieces, have the plastic person at the top of the structure, and not include any broken pieces. The instructions also informed participants that the boss and subordinate had distinct tasks. The boss' job was to plan the tower and give instructions, whereas their job, as subordinate, was to build the tower according to those instructions.

Participants were then told that, to familiarize themselves with how the Tinkertoy pieces fit together, they should spend about 5 minutes building a tower in accordance with the building instructions. As a visual cue, a sample tower was in the corner of the room, ostensibly left over from another participant. In addition to building a tower, participants also responded to four true/false questions to ensure that they understood the requirements for the building task (e.g., “The goal is to build the tallest tower possible,” “The other person will give me instructions for how to build the tower”).

After approximately 5 minutes, the experimenter returned and said that the other participant in the role of “boss” (i.e., the confederate) was still working on coming up with a plan for the tower that they would build together. The experimenter requested that, given the slight delay, the participant take a few minutes to work on a “Personal Recall Exercise” which was ostensibly for a separate study on memory of past experiences.

This recall task served as the sense of power manipulation (described in more detail later).

The experimenter returned 5 minutes later to collect the recall task (power manipulation) materials and led the participant to a room where the confederate was waiting. The experimenter then left the room. At that point, the confederate indicated a tower that was on the table in front of him and said to the participant: "This is what I've come up with for the tallest tower. When it is time to start building, you can use the pieces and build the tower exactly like this." The tower on the table was only 12 inches high, in all cases significantly shorter than what participants had constructed on their own. In addition, the plastic man was not at the very top, which was contrary to the instructions.

If the participant critiqued the tower or suggested an alternative, the confederate very politely responded by saying: "Thanks for your suggestion, I really appreciate it. First let's just go with this tower. There might be a chance to try another tower later." The confederate continued to provide a similar response if the participant persisted. Once the participant agreed to build the tower, the confederate set the stopwatch for 60 seconds while the participant built the tower. The entire interaction between the participant and the confederate was videotaped. Participants were informed at the start of the experiment that they would be videotaped and gave their agreement at the end of the experiment for the videotape to be used.

Upon completion of the tower construction, the experimenter returned and led the participant to another room where he or she completed a postbuilding questionnaire, which contained manipulation check items and a set of demographic questions.

Sense of power manipulation. Sense of power was manipulated using a priming task designed by Galinsky et al. (2003). By having individuals recall a time when they had or did not have power vis-à-vis another person, the task is designed to activate the psychological sense of high or low power. This manipulation has been used in a large number of studies and has been shown to effectively elicit a sense of high power or low power, and to also influence behavior in ways that are very similar to the effects of objective power (e.g., Anderson & Galinsky, 2006; Briñol, Petty, Valle, Rucker, & Becerra, 2007; DeCellis, DeRue, Margolis, & Ceranic, 2012; Fast et al., 2009; Galinsky et al., 2003; Guinote, 2007; Overbeck & Park, 2006).

Specifically, the writing task asks individuals to recall, and then describe in detail, a particular experience. Participants in the high sense of power condition were asked to write about an experience in which they had power, which was further explained as having influence over another person or people, being in a position to evaluate others, or having control over a resource valued or desired by others. Participants in the low sense

of power condition were asked to write about an experience in which they did not have power, which was explained as another person or people having influence over them, being in a position where they were being evaluated by others, or others having control over a resource they valued or desired. Participants were instructed to continue writing until the experimenter reentered the room.

So that we could check whether the manipulation of power was effective, at the end of the study, participants were asked to think back to the essay they had written and to rate the extent to which the situation had made them feel each of the following: powerful, influential, in-control, dominant, in-charge, independent, action-oriented, weak, dependent, and powerless (1 = *not at all*, 7 = *extremely*). This manipulation check was similar to ones used in past research (e.g., Lammers, Galinsky, Gordijn, & Otten, 2008; See et al., 2011).

Target openness manipulation. As noted, both the boss and subordinate were given a sheet of paper to read that ostensibly contained information on what makes leaders effective. In reality, however, the two sheets of paper were not always the same. Subordinates received one of two versions, which in all cases, they believed was also being read by the boss. These differing instructions were used to manipulate participants' perceptions of how open to input their boss was likely to be. The boss, on the other hand, always received a sheet of paper that said nothing about openness so that he remained blind to experimental condition.

In the "openness" condition, participants read the following instructions, which they thought were also given to the boss:

Research on what makes leaders effective versus ineffective has shown that successful leaders are committed and hard-working. It has also shown that successful leaders are open to hearing the ideas of their employees. So that is the model of leadership that we would like for you to have in mind as you assume the role of boss in this experiment.

In the control condition, participants read the following instructions (as noted, this was the information that the confederate was always given regardless of experimental condition):

Research on what makes leaders effective versus ineffective has shown that successful leaders are committed and hard-working. So that is the model of leadership that we would like you to have in mind as you assume the role of boss in this experiment.

We deliberately took the approach of providing contextual cues about how open the target would likely be rather than having the target try to

behave more or less “open.” The reason for this choice was twofold. One, it is not very clear how specific behaviors affect perception of whether a target is open to input. Morrison (2011, p. 391) noted that, despite several studies on the relationship between leader behavior and employee voice, “we still do not have a clear picture of exactly what it is that leaders do or do not do that shapes employee perceptions of openness.” Two, this approach enabled the confederate to be blind to experimental condition.

So that we could check the effectiveness of the manipulation, participants were asked at the end of the study to think back to right before they went into the room to do the building task and to respond to the following: “I felt the boss would be open to hearing my views” (1 = *not at all*, 7 = *extremely*).

Measures

Silence. We coded silence as 1 if the participant said nothing about the height of the tower or the fact that the man was not at the very top and merely agreed to build it as instructed. We coded silence as 0 if the participant questioned or critiqued the confederate’s tower (e.g., “Isn’t the guy supposed to be at the top?” “I think this is not the tallest tower you can make”), or offered a suggestion for how the tower could be better (“It could be taller if you . . .” “I think we could make it taller if we . . .”). To arrive at this coding, two raters blind to condition independently watched each of the videotapes of the interaction between the confederate and participant. There was only one case of disagreement between the two raters, which was resolved by watching the video again together.

Covariate. Despite participants having been randomly assigned to experimental conditions, in our preliminary analyses we noticed that an important demographic characteristic—whether or not the participant was a native English speaker—was distributed unevenly across cells. Thus, we included it as a covariate in our analysis to ensure it was not biasing the effects of the manipulations.

Results

Comprehension checks. It was important for us to confirm that participants were aware that the proposed tower did not meet the requirements of the task so that we could be confident that if they did not say anything they were consciously choosing to remain silent. We did this in two ways. First we examined two of the true/false questions that participants were asked before they began building: “the goal is to build the tallest tower possible.” and “the figure is supposed to be at the top of the structure.” All of the

participants answered correctly. Second, we examined the towers that the participants built when working on their own. All participants built towers that were three or more feet tall, much higher than the 12-inch structure proposed by the confederate, confirming that they were aware that a much taller tower could be built.

Manipulation checks. To assess the effectiveness of the power manipulation, we averaged the power manipulation check items to create a scale, where higher ratings indicated greater sense of power ($\alpha = .92$). The mean for this scale was significantly higher for participants in the high-power condition ($M = 4.6$) than for those in the low-power condition ($M = 2.9$), $F(1, 83) = 36.3, p < .001, \eta^2 = .30$, supporting the effectiveness of the manipulation.

To assess the effectiveness of the openness manipulation, we examined the item asking participants the extent to which they had felt their boss would be open to hearing their views. The mean was significantly higher for participants in the openness condition ($M = 4.9$) than for those in the control condition, ($M = 3.8$), $F(1, 83) = 7.6, p < .01, \eta^2 = .084$, indicating that the manipulation was successful.

There was no statistically significant difference in perceived openness between participants in the high-power condition ($M = 4.5$) and those in the low-power condition ($M = 4.1$), $F(1, 83) = 1.1, p > .05$, nor were there significant differences in reported feelings of power between participants in the openness ($M = 3.4$) and control conditions ($M = 4.0$), $F(1, 83) = 3.0, p > .05$. Thus, feeling more powerful did not cause participants to see the confederate as more open. Similarly, perceived openness did not make them feel more powerful.

Hypothesis testing. Table 1 provides the correlation matrix for the variables included in the analyses: silence, the power condition, the openness condition, and the nonnative English speaker covariate (1 = *nonnative speaker*). The high-power condition was coded as 1 and the low-power condition was coded as -1. Similarly, the target openness condition was coded as 1, whereas the control condition was coded as -1.

To test our two hypotheses, we ran a series of stepwise logistic regressions, with silence as the binary dependent variable. We first regressed silence on just the English speaker covariate.¹ In the second model, we added the power and openness factors. As shown in Model 2 of Table 2, the effect of the sense of power manipulation was significant ($B = -.49, SE = .25, p = .048$). Consistent with Hypothesis 1, a greater proportion of participants remained silent in the low sense of power condition (72.8%) than in the high sense of power condition (54.8%). There was also a

¹Excluding the covariate does not materially change the results. We also obtain very similar results using ANOVA.

TABLE 1
Correlations, Study 1 (Experiment, $N = 84$)

	1	2	3	4
1. Silence	-			
2. English speaker	-.09	-		
3. Power manipulation	-.22*	-.12	-	
4. Openness manipulation	-.27*	.20 [†]	.05	-

Note. [†] $p < .10$. * $p < .05$. ** $p < .01$.

TABLE 2
Logistic Regression Results Predicting Silence, Study 1 (Experiment, $N = 84$)

	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Constant	.89	.45	.89	.48	1.15	.54
English speaker	-.41	.52	-.34	.57	-.42	.59
Power manipulation			-.49*	.25	-.73*	.32
Openness manipulation			-.55*	.25	-.77*	.32
Power $\times$ openness					.76*	.32
ΔR^2			.15*		.09**	
R^2	.01		.16		.25	

Note. * $p < .05$. ** $p < .01$.

significant overall effect of the openness manipulation on silence ($B = -.55$, $SE = .25$, $p = .027$), which we did not formally hypothesize but did expect based on past research (Detert & Burris, 2007). Significantly fewer participants remained silent in the openness condition (51.2%) than in the control condition (76.4%).

Next, we added the interaction term, which was created by multiplying power and openness. Consistent with Hypothesis 2, the interaction between power and openness was significant ($B = .76$, $SE = .32$, $p = .019$). The effects of power ($B = -.73$, $SE = .32$, $p = .025$) and openness ($B = -.77$, $SE = .32$, $p = .018$) were also significant in this model.

The cell means for the four conditions are plotted in Figure 1. As shown, in the absence of cues suggesting that the target would be open, participants in the low sense of power condition remained silent much more often (95.7%) than those in the high sense of power condition (57%), $\chi^2 = 9.1$, $p = .003$. Yet when participants received cues suggesting high target openness, those with low power were silent to the same extent (50%) as those with high power (52%), $\chi^2 = .23$, $p > .80$.

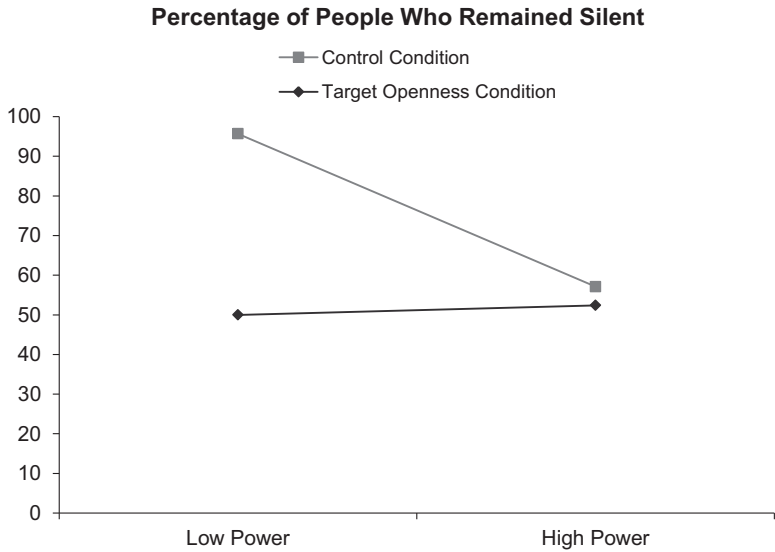


Figure 1: The Interaction of Sense of Power and Perceived Target Openness: Study 1.

Discussion

The results of Study 1 support both of our hypotheses. Participants were more likely to remain silent regarding a known performance problem when they were experiencing a sense of low power. However, this effect was diminished when the participant received information suggesting that the target would be open to input. Without any cues about target openness, individuals with low sense of power were much more likely to remain silent than those with high sense of power. When there were cues suggesting that the target was likely to be open to input, on the other hand, individuals experiencing low power were no more likely to exhibit silence than those experiencing high power. To our knowledge, this is the first lab study of silence or voice involving a behavioral dependent variable, thus allowing for direct observation of the causal factors involved in the choice to remain silent. To demonstrate the robustness of the effects and external validity, we follow with two survey studies.

Study 2

Method

Sample and design. Study 2 was a survey study of healthcare employees working at a large multispecialty and multioffice medical group. The

sample included nurses, medical assistants, office staff (e.g., patient service representatives, registrars), and a range of specialized skilled medical professionals such as physical therapists, x-ray technologists, and phlebotomists. The participants worked in 19 office locations across more than 30 medical specialties. Ninety-five percent were female, their average age was 42.5 years, and their average tenure with the organization was 6.5 years.

Online surveys were sent to all employees of the medical group, excluding physicians, temporary workers, and employees with no patient or doctor contact. Recipients were assured that participation was voluntary and that their responses would remain confidential. Of the 296 eligible respondents, 207 returned a completed survey, constituting a 70% response rate. Respondents and nonrespondents did not significantly differ from one another in terms of age, gender, tenure, or employment status.

Measures. Employee personal sense of power was assessed with an eight-item scale ($\alpha = .81$) designed and validated by Anderson et al. (2012). The items in the scale focus on an individual's perception that he or she is able to influence other people. Respondents were asked to respond with respect to their typical interactions with colleagues at work. Sample items are: "I can get others to do what I want," "I think I have a great deal of power," and "even when I try, I am not able to get my way" (reverse coded). Responses were on a seven-point scale (1 = *strongly disagree*; 7 = *strongly agree*) where higher numbers indicate a greater sense of power.

Target openness was assessed with four items ($\alpha = .97$) adapted from Ashford, Rothbard, Piderit, and Dutton's (1998) top management openness scale. Respondents were first asked to write the last name of the doctor with whom they work most closely on a day-to-day basis. They were then asked to respond to a series of questions with that particular doctor in mind. The openness items were as follows: "this doctor is interested in ideas and suggestions from employees," "good ideas get serious consideration from this doctor," "when suggestions are made to this doctor they receive fair evaluation," and "this doctor takes action on recommendations made by other employees." Responses were on a seven-point scale (1 = *strongly disagree*; 7 = *strongly agree*) where higher numbers indicate greater perceived target openness.

Employee silence was measured with three items ($\alpha = .95$) adapted from Tangirala and Ramanujam's (2008a) silence scale, which was also used in a healthcare context. Respondents were instructed to focus on the doctor whom they had named earlier on the survey (the doctor with whom they work most closely on a day-to-day basis) and to then indicate how often they do each of the following with that particular doctor: "chose to remain silent when you have concerns about patient safety," "remain silent when you have information that might help to prevent an incident," and

“say nothing about potential patient-related problems that you notice.” Responses were on a five-point scale (1 = *never*; 5 = *almost always*), where higher numbers indicate greater frequency of silence.

Control variables. We assessed proactive personality as a control variable because this has been identified as a strong individual-level predictor of voice (Crant, 1995; Detert & Burris, 2007). Proactive personality reflects a relatively stable tendency to take action to alter one's environment (Crant, 1995). It was measured with six items ($\alpha = .80$) from Bateman and Crant's (1993) proactive personality scale. Sample items are: “If I see something I don't like, I fix it,” “I love being a champion for my ideas, even against others' opposition,” and “I am always looking for better ways to do things.” Responses were on a seven-point scale (1 = *strongly disagree*; 7 = *strongly agree*) where higher numbers indicate a greater level of proactivity.

In addition to proactive personality, we also controlled for some basic job-related factors: organizational tenure (in years), part-time status, frequency of interaction with the target doctor, and job type. For part-time status, we created two dummy variables, one for part-time employees working more than 30 hours per week and one for part-time employees working less than 30 hours per week because the organization distinguishes between these two types of part-timers. Frequency of doctor interaction was assessed with one item asking respondents how often they interact with the doctor they were rating (1 = *only very rarely*; 7 = *throughout the day*). We regarded this as an important variable to control for as it was correlated with both silence and perceived openness. For job type, we created a dummy variable for the group of specialized medical professionals (e.g., physical therapists, x-ray technologists, phlebotomists) who comprised 20% of the sample and did not fall under any of the large job categories of nurses, medical assistants, or office staff. The reason was that preliminary analyses indicated that these employees differed from the others in the sample in terms of sense of power. None of the other job type categories were correlated with power, openness, or silence. Because our sample was predominantly female (95%), we did not control for gender. We also did not control for age, as it was missing for 36% of the sample and correlated with organizational tenure.

Analysis and Results

Table 3 presents the correlations, means, standard deviations, and reliability coefficients for all of variables included in the analyses. Before testing our hypotheses, we conducted a set of confirmatory factor analyses using item parcels to ensure that the three scales that we would be using

TABLE 3
Descriptive Statistics, Study 2 (Survey in Healthcare Organization, $N = 207$)

	<i>Mean</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Silence	1.40	.74	.95								
2. Org. tenure (years)	6.77	7.23	.11	—							
3. Part-time, <30 hours/week	.09	.29	.08	-.01	—						
4. Part-time, >30 hours/week	.06	.25	-.07	.08	-.09	—					
5. Job type	.21	.41	.03	.03	.18**	.07	—				
6. Frequency of interaction	4.39	1.05	-.19**	.04	-.32**	-.02	-.34**	—			
7. Proactive personality	5.40	.86	.05	-.10	.00	-.02	-.02	.12	.80		
8. Sense of power	4.16	.99	-.16*	-.06	.05	-.08	-.14*	.12	.30**	.81	
9. Target openness	5.65	1.23	-.24**	.02	-.03	-.03	-.05	.36**	.23**	.31**	.97

Note. Cronbach's alpha is italicized along the diagonal for multiple-item measures.

* $p < .05$, ** $p < .01$.

as predictor variables (sense of power, target openness, and proactive personality) were empirically distinct. A three-factor model had the best fit ($\chi^2(41) = 116.22$; $\chi^2/df = 2.83$; CFI = .94; TLI = .92; IFI = .95; RMSEA = .07). This model had superior fit to a single-factor model ($\Delta\chi^2(3) = 384.56$, $p < .01$), providing support for the discriminant validity of the scales.

The hypotheses were tested using ordinary least-squares regression. Before running the analysis, the sense of power and perceived openness variables were mean centered, and the interaction term was created by multiplying the mean centered variables. We regressed silence on the variables in three steps: first we entered the control variables, then we added the two independent variables, and finally we added the interaction term. Results from all three models are reported in Table 4. As shown in Model 2, the effect of sense of power on silence was negative and significant ($\beta = -.15$, $SE = .05$, $p = .046$), supporting Hypothesis 1. There was also a negative effect of target openness ($\beta = -.18$, $SE = .04$, $p = .017$). In Model 3, the coefficient for the interaction between sense of power and perceived doctor openness was significant ($\beta = .26$, $SE = .04$, $p < .001$), supporting Hypothesis 2. The coefficient for power was significant in Model 3 as well, as were the coefficients for tenure, frequency of doctor interaction, and proactive personality.

We probed the interaction by calculating simple slopes for the effects of power on silence at specified values of openness using the method and associated utility discussed in Preacher, Curran, and Bauer (2006). We assessed the simple slopes at one standard deviation above and below the mean for the openness measure. The analysis revealed that the relationship between sense of power and silence is significant when perceived openness is a standard deviation or more below the mean ($\beta = -.29$, $SE = .07$, $p < .001$) but is not significant when openness is one standard deviation or more above the mean ($\beta = .06$, $SE = .07$, $p = .35$). Figure 2 graphically depicts this interaction, illustrating that the negative relationship between sense of power and silence is essentially eliminated when perceptions of target openness are high.

Discussion

Replicating the pattern found in Study 1, the results from Study 2 provide support for our hypothesis that the experience of low power is related to greater silence and also for our hypothesis that perceptions of target openness mitigate this effect. In comparison to the first study in the laboratory, this survey study has stronger external validity because participants were working in an actual organizational setting. It was, however,

TABLE 4
Regression Results Predicting Silence, Study 2 (Survey in Healthcare Organization, N = 207)

	Model 1			Model 2			Model 3		
	B	SE	β	B	SE	β	B	SE	β
Constant	1.84	.42	—	1.22	.45	—	1.19	.43	—
Org. tenure (years)	.02	.01	.14*	.02	.01	.14*	.02	.01	.17*
Part-time, <30 hours/week	.05	.24	.02	.17	.24	.05	.24	.23	.07
Part-time, > 30 hours/week	-.25	.20	-.09	-.26	.19	-.09	-.25	.18	-.09
Job class	-.09	.14	-.05	-.09	.14	-.05	-.14	.14	-.07
Frequency of interaction	-.19	.06	-.24**	-.13	.07	-.16*	-.13	.06	-.17*
Proactive personality	.06	.06	.07	.13	.06	.15*	.12	.06	.14*
Sense of power				-.11	.05	-.15*	-.11	.05	-.15*
Target openness				-.11	.05	-.18*	-.08	.04	-.13†
Power × openness							.15	.04	.26**
ΔR²					.06**			.07**	
R²		.08			.13			.20	
Adjusted R²		.05			.10			.16	

Note. †p < .10. *p < .05. **p < .01.

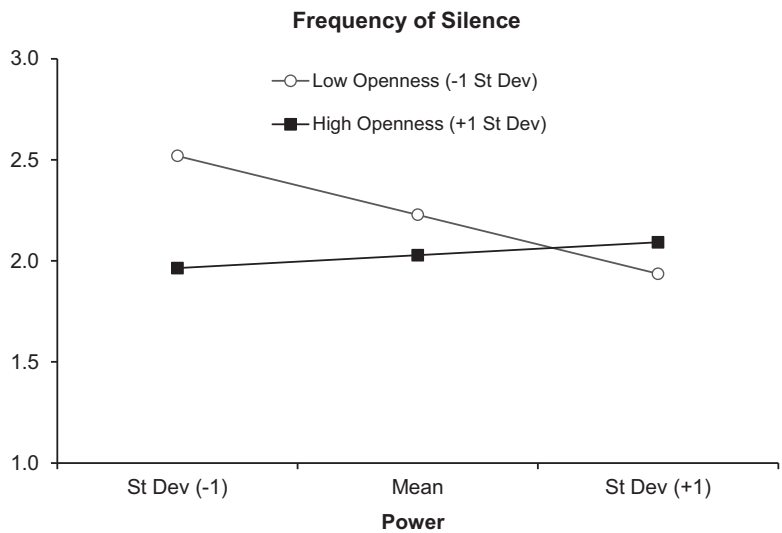


Figure 2: The Interaction of Sense of Power and Perceived Target Openness: Study 2.

conducted within a single organization, with a predominantly female sample, which raises questions about generalizability. In particular, the norms around voice and silence may be different in healthcare organizations as compared to organizations in other industries. We therefore conducted an additional survey study using a more diverse sample of employees. Conducting a second survey study also enabled us to control for some additional constructs that might confound the relationships between sense of power, openness, and silence, thereby strengthening the internal validity of the findings.

Study 3

Method

Sample and design. With the goal of obtaining a sample of employees that was diverse in terms of occupation and industry setting, we recruited working adults through a national online panel. To qualify for participation, individuals needed to be fluent in English, have at least a 2-year college degree, be working full time, and have someone they consider to be a boss. The resulting sample ($N = 308$) was 56% female with an average age of 44.8 years ($min = 22$; $max = 65$) and an average of 21.5 years of work experience ($min = 1$; $max = 45$). Eighty-four percent identified

themselves as White/Caucasian, 6% as Black/African American, 6% as Asian, and 3% as Hispanic. Thirty-four percent held associate's degrees, 47% held bachelor's degrees, and 13% held master's degrees. Participants worked in jobs that spanned 20 industries (all within the United States), with the most common industry categories being professional or technical services (17.5%), education (13.6%), healthcare/social work (12.3%), manufacturing (8.8%), and finance/insurance (5.8%).

The survey was completed online and was anonymous. The 308 individuals included in the final sample were those who submitted a complete survey and passed both the screening questions (confirming that they were over 18, employed full time, and had a boss) and an attention filter (to make sure they were reading the instructions).²

Measures. The survey contained the same scales used in Study 2 for silence, sense of power, and openness. The only change was that, for silence and openness, respondents were instructed to focus on their interactions with their direct supervisor, unlike in Study 2 where they were asked to consider the doctor with whom they worked most closely.

Control variables. As in Study 2, we assessed proactive personality and tenure to use as control variables, but we did not control for full- or part-time status this time because all respondents were full-time employees. We did, however, use gender as a control variable because the sample was more diverse on this variable than the Study 2 sample.

We also took the opportunity to assess some additional constructs that might bias the relationships between silence, power, and openness. Specifically, we focused on procedural justice, self-esteem, and job performance. Procedural justice perceptions have been shown to relate to silence (Tangirala & Ramanujam, 2008a). We also felt that controlling for procedural justice was important in order to demonstrate that the moderating effect of target openness on silence was not being explained by justice perceptions. Our measure of procedural justice was a seven-item scale from Colquitt (2001), which asks about the procedures used to determine important outcomes such as pay, promotions, and job assignments. Responses were on a five-point scale (1 = *strongly disagree*; 5 = *strongly agree*), where higher numbers indicate greater levels of perceived procedural justice.

In terms of dispositional variables, proactive personality is one of the most robust predictors of voice and silence (Crant, 1995; Detert & Burris, 2007), but there is evidence that self-esteem may also affect this behavior

²More specifically, 775 individuals clicked on the survey link, but 288 were not allowed to complete the survey because they did not pass the attention filter and 179 were disqualified due to ineligibility (not meeting one or more of the criteria for inclusion) or because they provided suspicious or indiscriminate responses.

(e.g., LePine & Van Dyne, 1998; Liang et al., 2012). Moreover, there is research showing that self-esteem relates to sense of power (Fast et al., 2009; Wojciszke & Struzynska-Kujalowicz, 2007). We therefore wanted to be confident that power had an effect on silence over and above any effects of self-esteem. To assess self-esteem, we used the 10-item scale from Rosenberg (1965). This measure has a four-point response scale (1 = *strongly disagree*; 4 = *strongly agree*), where higher numbers indicate higher self-esteem.

Finally, Detert and Burris (2007) found that job performance related to both perceived openness and voice. Thus, we included a single-item self-report measure of job performance from Shaw and Gupta (2004): "*Please rate your job performance over the past year, on a scale of 0 to 100, where 0 = very poor performance and 100 = perfect performance.*"

Analysis and Results

Before testing our hypotheses, we conducted a set of confirmatory factor analyses, using item parcels, to assess the discriminant validity between the five multi-item scales that would be included in our model: sense of power, target openness, proactive personality, procedural justice, and self-esteem. A five-factor model demonstrated very good fit to the data ($\chi^2(125) = 189.5$; $\chi^2/\text{df} = 1.52$; CFI = .99; TLI = .98; IFI = .99; RMSEA = .04) and had superior fit to a single-factor model where all of the items were combined ($\Delta\chi^2(135) \Delta(10) = 2595.5$, $p < .001$). The five-factor model also had a superior fit to a three-factor model where the items for power and proactive personality were combined and the items for openness and procedural justice were combined ($\Delta\chi^2(132) \Delta(3) = 1647.9$, $p < .001$).

Table 5 shows the correlations, means, standard deviations, and reliability coefficients for all of the measures used in the analyses. We tested our two hypotheses using ordinary least-squares regression. As with Study 2, sense of power and perceived openness were mean centered, and the interaction term was created by multiplying the mean centered variables. We entered the control variables first, then the two hypothesized independent variables, and finally the interaction term. Because the job performance control variable was highly skewed, we took the natural log of that variable before including it in the analysis. Results are reported in Table 6. In support of Hypothesis 1, there was a significant negative relationship between sense of power and silence in Model 2 ($\beta = -.21$, $SE = .05$, $p = .005$). Openness ($\beta = -.19$, $SE = .04$, $p = .005$) and self-esteem ($\beta = -.37$, $SE = .09$, $p < .001$) were negatively related to silence as well. With the other variables taken into account, the coefficients for

TABLE 5
Descriptive Statistics, Study 3 (Online Survey, N = 308)

	<i>Mean</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Silence	2.07	1.56	.83								
2. Job perf. (logged)	4.44	.14	-.14*	—							
3. Years of experience	21.46	11.40	-.05	.19**	—						
4. Gender (1 = male)	.44	.50	-.06	.01	.02	—					
5. Proactive personality	5.07	.95	-.26**	.27**	-.01	.08	.89				
6. Self-esteem	3.28	.53	-.43**	.36**	.26**	.02	.41**	.89			
7. Procedural justice	3.38	.95	-.20*	.19**	-.03	.14**	.31**	.21**	.93		
8. Sense of power	4.39	1.06	-.38**	.24**	.04	.06	.52**	.37**	.43**	.88	
9. Target openness	5.06	1.56	-.29**	.09	-.07	.15**	.28**	.15**	.65**	.47**	.97

Note. Cronbach's alpha is italicized along the diagonal for multiple-item measures.

* $p < .05$. ** $p < .01$.

TABLE 6
Regression Results Predicting Silence, Study 3 (Online Survey, N = 308)

	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Constant	3.76	1.25	—	2.76	1.23	—	2.95	1.23	—
Job performance (logged)	.18	.30	.03	.16	.29	.03	.13	.29	.02
Years of experience	.00	.00	.05	.00	.00	.04	.00	.00	.04
Gender (1 = male)	-.05	.08	-.03	-.03	.08	-.02	-.04	.08	-.03
Proactive personality	-.06	.05	-.07	.02	.05	.03	.02	.05	.03
Self-esteem	-.61	.09	-.41**	-.56	.09	-.37**	-.58	.09	-.39**
Procedural justice	-.08	.05	-.10 [†]	.07	.06	.08	.06	.06	.08
Sense of power				-.15	.05	-.21**	-.14	.05	-.18**
Target openness				-.10	.04	-.19**	-.07	.04	-.14*
Power $\times$ openness							.05	.02	.12*
ΔR^2						.06**			.01*
R^2		.21			.27			.28	
Adjusted R^2		.19			.25			.26	

[†] $p < .10$. * $p < .05$. ** $p < .01$.

proactive personality, procedural justice, and job performance were not significant.

In support of Hypothesis 2, the Model 3 results in Table 6 reveal a significant interaction between sense of power and perceived openness ($\beta = .12$, $SE = .02$, $p = .029$). To probe this interaction, we calculated simple slopes for the effects of power on silence at both high and low levels of openness (one SD above the mean and one SD below the mean; Preacher et al., 2006). These analyses showed that the relationship between sense of power and silence was significant when perceived openness was a standard

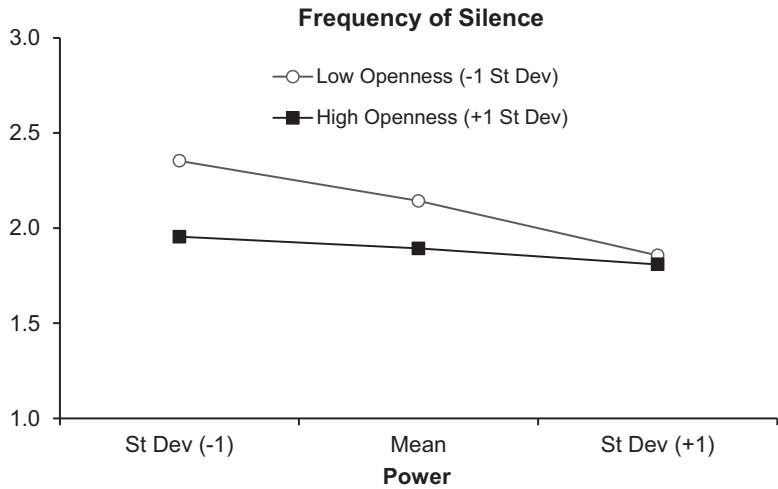


Figure 3: The Interaction of Sense of Power and Perceived Target Openness: Study 3.

deviation or more below the mean ($\beta = -.21$, $SE = .06$, $p < .001$) but not significant when openness was one standard deviation or more above the mean ($\beta = -.06$, $SE = .06$, $p = .30$). Figure 3 displays this interaction.

Discussion

The findings from Study 3 provide additional evidence that the sense that one lacks power in relation to others at work is associated with greater silence but that perceptions of target openness can compensate for this effect. In comparison with Study 2, this survey study has stronger external validity because it was collected from a roughly equal mix of male and female full-time employees across a wide range of professions and industries. This second survey study also enabled us to demonstrate that our findings are robust even after controlling for related constructs (procedural justice, self-esteem, job performance, and proactivity), thereby also strengthening the internal validity of the findings.

General Discussion

Our purpose in this paper has been to deepen current understanding of how individual and contextual factors affect the tendency for employees to intentionally remain silent when they have information to share. Integrating the approach-inhibition theory of power with the literature on

silence and voice, we focused on the role of two key factors in explaining the choice to remain silent: employees' psychological sense of power and perceived target openness. We first presented the results of a laboratory study in which sense of power and target openness were both manipulated and we could observe actual silence versus voice, and we followed our experimental investigation with two field-based survey studies. Across all three studies, our findings suggest that an employee's personal sense that he or she is lacking in power in relation to others at work is a key factor contributing to the decision to remain silent but that this effect is mitigated when the potential target of the voice message is perceived to be open to input.

Our studies, like any research, have some limitations that should be noted. The survey studies were both cross-sectional, which limits our ability to draw conclusions about causality. Fortunately, the laboratory study does enable such conclusions to be drawn. Second, similar to other survey studies of silence, our silence measure was self-reported. This was necessary because it is not possible for supervisors or peers to know whether an employee is deliberately holding back suggestions, ideas, or opinions. Nonetheless, self-presentation concerns may have led to underreporting (for similar arguments, see Tangirala & Ramanujam, 2008a). Another limitation of the two survey studies is that all of the measures were collected at the same time, which might have created common method bias.

The experiment, conducted in the laboratory with a student sample, had weaknesses with respect to external validity. However, a strength of the experiment was that it allowed us to directly observe whether or not participants chose to remain silent. Because we created a situation where there was an obvious performance problem, we could safely conclude that absence of voice reflected a conscious choice to remain silent.

Theoretical Contributions and Future Research Directions

The findings from our three studies contribute to several research literatures. Most importantly, our results speak to researchers interested in the personal and contextual factors that influence silence. Our main contribution was to integrate the approach-inhibition theory of power with research on voice and silence to demonstrate that silence is rooted in the psychological experience of powerlessness with respect to other people at work. Conversely, we show that feeling more powerful, even when one is interacting with someone of higher rank, can reduce the tendency toward silence and encourage individuals to speak up when they have potentially useful information to share. Our findings further contribute to voice and silence research by revealing that the stifling effect of powerlessness is

reduced or even eliminated when the individual expects that the voice target will be open to input. These findings highlight how a personal and situational factor jointly contribute to employee silence and do so using a theoretical paradigm that is new to the voice literature.

Our findings also contribute to the literature on the psychology of power. Past work has shown both positive effects of high sense of power, such as greater creativity, less attitude conformity, and greater cognitive focus (e.g., Galinsky et al., 2008; Guinote, 2007; Smith, Jostmann, Galinsky, & van Dijk, 2008), and negative effects of high sense of power, such as increased stereotyping, reduced perspective taking, and reduced advice taking (e.g., Galinsky et al., 2006; Goodwin, Gubin, Fiske, & Yzerbyt, 2000; See et al., 2011). Our findings add to the former body of work by suggesting that a high sense of power can enable people to overcome the tendency to remain silent about concerns or problems when interacting with someone of higher rank. In addition, our investigation is one of few to focus specifically on the psychology of *low* sense of power, and our finding that perceived target openness may compensate for the psychological experience of low power is consistent with past research suggesting a greater sensitivity to contextual cues on the part of individuals experiencing a low sense of power (e.g., Galinsky et al., 2008). Our results also add to the psychology literature on power by highlighting a critical workplace behavior (silence/voice) and contextual factor (target openness) that have not previously been examined.

Finally, our work should be of interest to researchers studying features of the workplace that contribute to open information sharing, consultation, and the creation of a voice climate more generally (e.g., Ashford, Sutcliffe, & Christianson, 2009; Edmondson, 2003; Frazier & Fainshmidt, 2012; Morrison, Wheeler-Smith, & Kamdar, 2011; Tangirala & Ramanujam, 2012). Our investigation highlights the importance of target openness as a moderating variable that might help override the role of other factors that lead to silence. Building from our findings, it could be fruitful to examine whether other contextual factors similarly moderate the relationship between power and silence, and hence whether there are other factors that can help to encourage low-power employees to speak up when they have potentially valuable information to share. Furthermore, we note that there is a need for greater theoretical and empirical research on what specific policies and behaviors are antecedents to perceived openness.

To our knowledge, Study 1 is the first experimental investigation directly examining the choice to speak up or remain silent. We would encourage additional experimental research along these lines, as this approach allows researchers to go beyond a retrospective assessment of whether and when people voice or remain silent. In addition, an experimental methodology using a behavioral dependent variable provides the opportunity to gain insight into different forms and nuances of employee

silence and voice. In our study, for example, we observed that most individuals who remained silent simply responded in the affirmative when the confederate explained what he wanted them to do and then asked them if they were ready to begin. However, in a few cases the participant, although not verbally expressing disagreement, displayed visible nonverbal cues (e.g., rolling of the eyes, smirking) or intonation cues (e.g., saying “okay” in a tone that implied skepticism). These observations highlight nonverbal nuances associated with silence, which are worthy of further research.

We also encourage future research that examines the relationships among power, openness, and silence over time. It is possible, for example, that as an employee repeatedly remains silent about important issues, his or her sense of power and/or perceptions of target openness might further diminish, creating a negative spiral. It is also possible that, over time, sense of power and perceived openness affect one another. Longitudinal studies would provide an opportunity to study such effects.

Finally, we would encourage further investigation into the base rate of silence versus voice and how this might vary across settings and issues. In our experiment, more than half of the participants (65%) remained silent about the flaws in the proposed tower design. This observation is consistent with speculation in the literature that silence can be very common (Kish-Gephart, Detert, Trevino, & Edmondson, 2009; Morrison & Milliken, 2000; Pinder & Harlos, 2001). In the survey studies, on the other hand, the reported frequency of silence was relatively low, similar to what was observed in Tangirala and Ramanujam’s (2008a) study. One possible reason for this difference is social desirability. Particularly in Study 2, participants may not have wanted to admit that they sometimes fail to speak up about patient-related issues. Another reason may relate to issue seriousness. Despite evidence that employees do withhold information about serious issues, including sexual harassment and professional misconduct (Milliken et al., 2003; Pinder & Harlos, 2001), this may be less frequent than the withholding of suggestions or information about suboptimal performance. The higher rate of silence in the experiment might also reflect, at least in part, that failing to speak up did not carry the high stakes that it often does in organizational settings. However, this difference is probably counter balanced by the fact that, in the lab, speaking up was not risky in the way that it often is in the workplace.

Managerial Implications

Our results have implications not only for research but also for practice. Particularly in high-reliability contexts (e.g., hospitals, airplane cockpits) where errors can have serious implications, there is considerable

interest in understanding how to ensure that employees speak up when they have concerns or are aware of problems (e.g., Edmondson, 2003; Tangirala & Ramanujam, 2008a). One of the factors that presumably stifles voice is fear of challenging those in higher status positions (Morrison & Milliken, 2000; Morrison & Rothman, 2009). Yet our findings suggest that, if managers make efforts to reduce employees' feelings of low power, this may help to reduce the tendency to remain silent. Some of the ways in which this might be done is through coaching, empowerment, or participative leadership (Edmondson, 2003; Nemhart & Edmondson, 2006; Spreitzer, 1995).

Our findings also suggest that if managers work to assure employees that they are genuinely open to employee input, this may not only elicit greater voice (Detert & Burris, 2007) but also mitigate the effect of low sense of power on the tendency to remain silent. Managers are thus advised to make sure that they are not merely saying that they are open to input without convincing employees that this is genuine. Doing so is particularly critical given the evidence, from our results and from other studies, that in the absence of conditions that actively encourage employees to speak up, the default may be to remain silent.

It needs to be recognized, however, that it can be difficult to ensure that employees see their supervisors as open to input, and organizational scholars do not have a very clear understanding of the specific behaviors that shape openness perceptions. As noted by Ashford et al. (2009), just because a supervisor creates opportunities for employees to speak up does not guarantee that employees will perceive him or her as open to input because there is considerable "noise" in organizations that make it difficult to send a clear and unambiguous message. We suggest that organizations do more than verbally encourage managers to be open. They must also ensure that there are systems and procedures in place to allow for upward communication, such as formal grievance procedures and anonymous suggestion systems, as well as regularly gauge (e.g., through climate surveys or other diagnostic approaches) whether employee perceptions about the degree of openness in the workplace are in line with these formal procedures.

In closing, across our three studies, we found consistent evidence that silence was especially likely for individuals experiencing a low sense of power. Yet we also find that perceived target openness compensated for this effect, encouraging employee to speak up when they would not otherwise do so. Given the importance of information sharing within organizations, particularly between employees who differ in subjective or objective power, we encourage future research to investigate other factors that might encourage employees with a low sense of power to voice their suggestions and concerns.

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