Upward Communication of Audit Issues: The Effects of Issue Ambiguity and Intrinsic Motivation

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ABSTRACT
Audit leaders are required to encourage upward communication of significant audit issues in order to ensure high audit quality. This paper reports four studies that examine how the ambiguity of a potential audit issue influences audit team members’ willingness to speak up about that issue and whether audit leadership that fosters auditors’ intrinsic motivation can improve willingness to speak up. Study 1 provides experimental evidence that auditors are more willing to speak up when an audit issue is less ambiguous than when it is more ambiguous. Study 2 replicates this finding and demonstrates that auditors are more likely to speak up to leaders who focus on intrinsic versus extrinsic motivators, regardless of the level of ambiguity surrounding the audit issue. Studies 3 and 4 corroborate that intrinsic motivation is the causal construct behind the Study 2 leadership result. Study 3 experimentally demonstrates that interns view intrinsically motivated auditors as more likely to report potential audit issues than extrinsically motivated auditors. Study 4 surveys auditors and non-auditing professionals about their workplace speaking up behaviors and finds that speaking up is positively associated with a trait measure of intrinsic motivation. Our paper demonstrates that audit leaders can increase auditors’ willingness to speak up, regardless of audit issue ambiguity, via leadership focused on intrinsic motivation and that intrinsic motivation, more generally, is positively associated with speaking up.

Keywords: Audit teams, information sharing, leadership, employee voice, experiment, survey.

Data Availability: Contact the authors
I. INTRODUCTION

Effective audit team communication is essential to conducting high quality audits (Solomon 1987). Upward communication is particularly critical because lower-level (staff) auditors gather most of the audit evidence (Vera-Munoz et al. 2006; Bennett and Hatfield 2013), placing them in the best position to discover potential accounting and audit issues. If lower-level auditors do not actively communicate potential issues upward, superiors are unlikely to discover these issues in a timely manner (Rich, Solomon, and Trotman 1997). On the other hand, prompt communication of potential issues facilitates high quality audits by allowing the audit team an opportunity to appropriately respond to risks by changing the nature, timing, and extent of audit procedures. Consistent with this premise, PCAOB AS 10 directs auditors to raise issues that may be consequential and requires leaders to encourage that communication (PCAOB 2010).

In this paper, we examine staff auditor’s willingness to speak up to share information with a superior about a potentially important audit issue. In particular, we examine whether that willingness depends on audit issue ambiguity and how the audit team leader motivates audit staff; i.e., whether the superior focuses on intrinsic or extrinsic motivators. We build on theory from the voice literature in management, which highlights the important role that leaders play in facilitating upward communication of issues, but has not specifically considered how key factors in the audit environment, including issue ambiguity and leadership motivational focus, affect speaking up.

Ambiguity is defined as uncertainty about a current state (e.g., Ellsberg 1961; Einhorn and Hogarth 1985). It is driven by data insufficiency and data complexity (Luippold and Kida 2012). For example, auditing fair values and complex estimates involves significant ambiguity in that the auditor typically has insufficient information about the range of potential future
outcomes and their probabilities of occurrence (Christensen, Glover, and Wood 2012; Bratten, Gaynor, McDaniel, Montague, and Sierra 2013; Griffith, Hammersley, and Kadous 2015). Complex transactions, vague auditing standards, ill-structured audit tasks, and insufficient, unreliable data are all common auditing environment challenges that can increase ambiguity (Brown-Liburd, Issa, and Lombardi 2015; Luippold and Kida 2012; Bigus 2012). These circumstances imply that even seasoned auditors will sometimes have difficulty determining whether an issue should be communicated. Yet, often it is the least experienced auditors who must decide whether the issue warrants further consideration by those higher up the auditing hierarchy.

We predict that auditors will be less likely to speak up to share issues that are more (versus less) ambiguous. Some research indicates that auditors faced with ambiguity exhibit greater care (Zimbelman and Waller 1999), and this could imply a greater willingness to speak up to get the issue clarified. However, this result may not extend to situations in which reporting is aversive and the auditor could “bury” the issue by failing to report it (Rich et al. 1997; Gold, Gronewold, and Salterio 2014; Nelson, Proell, and Randel 2016). In such a circumstance, fear of negative performance evaluation can increase ambiguity aversion (Trautmann, Vieider, and Wakker 2008). By burying the issue, auditors can avoid ambiguity. Thus, we expect that auditors will be less likely to speak up when the issue they are considering reporting is more ambiguous.

Audit leaders have meaningful influence over lower-level auditors’ judgments and decisions through the former’s role as supervisor and evaluator. For example, superiors’ preferences for efficiency versus effectiveness influence lower-level auditors’ judgments and their evaluations of client-provided explanations and evidence (Peecher 1996; Wilks 2002). Leaders also influence upward communication of audit issues. For example, auditors tend to
worry about budget and thus may be unwilling to raise an issue that will require changes to an audit plan because they expect their supervisor to react negatively (Nelson and Proell 2016). Further, auditors tend to speak up more about issues that align with the leader’s preferences, and to withhold or distort information that could change the nature, timing, and extent of audit procedures when the leader is concerned about efficiency (Nelson et al. 2016).

In addition to influencing the information exchange process (Detert and Burris 2007; Gissel and Johnstone 2016; Nelson and Proell 2016), leaders are charged with motivating staff (Kotter 2001). Accordingly, staff auditors are likely to look to their leaders for cues as to what information is valued (Nelson and Proell 2016). We expect that auditors will speak up more to leaders who motivate by focusing on employees’ learning and development (i.e., intrinsic rewards) than to leaders who motivate by focusing on employees’ compensation and opportunities for promotion (i.e., extrinsic rewards). Intrinsically motivating leaders signal the importance of gaining audit knowledge and developing into a better auditor, and they also may pique the auditor’s curiosity about the issue and general interest in learning, encouraging further examination of the issue. We further expect that the effect of the leader’s focus will be larger when the issue is more ambiguous and auditors are more open to leader guidance. We expect that the leader’s focus will play a smaller role in determining auditors’ willingness to speak up when the audit issue is less ambiguous because failure to raise relatively unambiguous issues more clearly violates PCAOB AS 10, which requires auditors to raise potentially important issues to supervisors.

We provide converging evidence on these issues using experimental and survey methods. In Study 1, 51 accounting alumni participants with auditing experience assess a typical staff auditor’s willingness to speak up about a potentially important audit issue. We experimentally
manipulate the level of ambiguity of the audit issue and we find that auditors are less willing to speak up when the audit issue is more ambiguous. Study 2 similarly asks 117 staff auditors from two large public accounting firms to assess a typical staff auditor’s willingness to speak up about a potentially important audit issue. That study replicates the Study 1 findings with a more nuanced manipulation of audit issue ambiguity and tests our remaining hypotheses. We find that auditors are less willing to speak up when the audit issue is more ambiguous. However, we do not find the predicted interaction between audit issue ambiguity and audit leadership; instead, we find that auditors are more likely to speak up to leaders who motivate them intrinsically versus extrinsically regardless of the level of audit issue ambiguity. This finding is particularly important because it suggests that leader motivation techniques affect staff auditors’ willingness to speak up even in the presence of relatively unambiguous issues that are required to be communicated to superiors under AS 10.

Both Studies 3 and 4 provide additional evidence that intrinsic motivation drives the Study 2 results related to the leader’s motivational focus, and Study 4 generalizes the intrinsic motivation result to auditors’ as well as non-auditors’ real world speaking up behaviors. In Study 3, 93 masters of accountancy students who had previously completed an audit internship rate a staff auditor described as intrinsically motivated as being more willing to speak up than a staff auditor described as extrinsically motivated. In Study 4, we survey 68 staff auditors from two large public accounting firms and 100 non-audit working professionals, and we find a positive association between respondents’ own trait measures of intrinsic motivational orientation (i.e., the extent to which an individual is typically focused on intrinsic motivation) and their speaking up behaviors in the work place. We conclude that auditors who are focused on their intrinsic motivation are more likely to speak up than are those focused on their extrinsic motivation
regardless of whether the focus on intrinsic motivation is driven by reactions to audit leadership or comes from another source, including the disposition of the auditor.

These results provide several contributions. First, the PCAOB has expressed concerns about how audit firm management practices such as “tone at the top” affect audit quality (PCAOB 2012). Our research directly informs audit firms and the PCAOB how audit leadership can increase compliance with PCAOB AS 10 and, as a result, audit quality. Our results indicate that audit leaders who motivate auditors intrinsically, rather than extrinsically, increase staff auditors’ willingness to communicate audit issues to their superiors. Such communication gives senior auditors the opportunity to respond to issues by changing the nature, timing, and extent of audit procedures employed, as necessary. These findings complement recent work demonstrating that auditors reminded of their intrinsic motivation exhibit high quality audit processing and judgments in complex audit tasks (Kadous and Zhou 2016), and they add to the limited prior research on how intrinsic motivation can be promoted in organizations (Gagné and Deci 2005). By demonstrating that audit team leaders can locally increase motivation that results in increased compliance with auditing standards, our results are consistent with concerns that the current penalty regime may not be the most productive way to motivate auditors in a changing environment (Peecher, Solomon, and Trotman 2013). We provide a complementary tool to these penalties.

Second, we contribute to the literature investigating determinants of audit team information and knowledge sharing (e.g., Rich et al. 1997; Vera Munoz et al. 2006; Gold et al. 2014; Gissel and Johnstone 2016; Nelson et al. 2016; Nelson and Proell 2016). While prior research indicates that auditors do not always speak up to share issues, there are relatively few audit studies examining this topic. Our research answers the call by Nelson et al. (2016) to
expand our understanding of factors that can cause auditors to withhold information by examining issue ambiguity, an important feature of the auditing environment. Moreover, we highlight a path for improving information sharing by tapping into what audit leaders are already responsible for doing—motivating audit staff. Our results indicate that small changes to leaders’ focus in encouraging audit effort can result in meaningful improvements in audit quality.

Third, we contribute to management research. While prior management research indicates that issue content plays a role in whether employees speak up, that research has focused on the distinction between speaking up with a new idea or speaking up to identify a problem (e.g., Liang, Farh, and Farh 2012). We identify issue ambiguity as a relevant content dimension that influences speaking up. Further, while prior management voice research establishes that leaders play a critical role facilitating upward communication, most of that literature focuses on “global assessment” theories (e.g., transformational leadership, leader-member exchange). These theories describe desirable leadership characteristics in terms of broad principles, such as facilitating trust and respect and guiding change through inspiration (see Schriesheim, Castro, and Coglister 1999 and Yukl 1999 for reviews). A weakness of such theories is that they do a poor job of addressing specific behaviors and practices that leaders should employ (Proell, Sauer, and Rodgers 2016). We identify a specific leader behavior (focusing auditors on their intrinsic motivation) that enhances upward communication. In addition, to our knowledge, we are the first to identify a general connection between intrinsic motivation and voice.

The rest of this paper proceeds as follows. Section II provides background and hypotheses. Section III describes the method and results of the four studies. Section IV summarizes the results and discusses implications, limitations and directions for future research.
II. BACKGROUND AND HYPOTHESES

*Upward Communication in Audit Teams*

Relatively inexperienced, lower-level auditors tend to spend more time in the field than do more experienced auditors, and they gather the bulk of audit evidence (Vera-Munoz et al. 2006; Bennett and Hatfield 2013). These lower-level auditors, including staff and interns, may encounter a document or a client explanation that is not quite as expected while conducting fieldwork. They may engage in or overhear conversations with client personnel that have potential audit implications. In order for the audit team to appropriately respond to an issue that may affect the risk of material misstatement, the issue has to be communicated upward. This implies that upward communication of potential audit issues is critical to an effective audit. Accordingly, PCAOB AS 10 directs auditors to raise issues that may be consequential to their superiors, and it requires leaders to encourage that communication (PCAOB 2010).

From the perspective of the management literature, upward communication is an illustration of employee “voice.” Employee voice is the “verbal communication of problems or ideas intended to stimulate organizational improvement to superiors” (Burris, Detert, and Romney 2013, 22), and it usually implies a challenge to the status quo (Van Dyne, Cummings, and McLean-Parks 1995). As voicing problems or a desire to change the status quo is risky, it follows that employees might be concerned about supervisor reactions and thus self-censor to avoid any potential negative repercussions from their supervisors. Indeed, auditing research indicates that auditors do not always speak up to share potentially important issues (Gold et al. 2014; Nelson et al. 2016). For example, Gold et al. (2014) find that auditors are unwilling to report known peer work-paper auditing errors when the audit firm’s culture is blame oriented. Nelson et al. (2016) specifically adapted the management voice perspective to the auditing
context and found that auditors were more likely to raise issues that were consistent with the audit leader’s primary focus on either efficiency or effectiveness, and they were relatively unwilling to share issues contrary to that focus. The fact that auditors were reluctant to raise issues contrary to the leader’s primary focus suggests that prior research regarding auditors’ attempts to influence performance evaluations by stylizing workpapers (e.g. Rich et al. 1997) extends to informal information sharing in the audit environment.

It is concerning that auditors appear unlikely to raise issues contrary to a leader’s principal focus, as this limits the audit team’s ability to execute appropriate audit procedures given shifting circumstances, and it violates auditing standards. Increasing our understanding of factors that could inhibit or enhance an auditor’s willingness to raise issues beyond an audit leader’s primary focus and beyond a blame culture is important to understanding how audit firms can increase audit quality (Nelson et al. 2016).

**Voice and Ambiguity**

While management research explores a variety of factors associated with decreased voice, that literature has not explored how features important to the auditing context, including the level of ambiguity in the audit issue, affect voice. The audit environment is characterized by vague auditing standards, ill-structured audit tasks, and insufficient, unreliable, complex data (Brown-Liburd, Issa, and Lombardi 2015; Luippold and Kida 2012; Bigus 2012), indicating that ambiguity is a key feature of the setting. In addition, ambiguity has figured prominently in prior auditing research (e.g. Nelson and Kinney 1997; Zimbelman and Waller 1999; Bigus 2012; Luippold and Kida 2012), and Nelson et al. (2016) specifically identify issue ambiguity as a potentially critical voice-related variable.
As mentioned previously, we define ambiguity as uncertainty about a current state (i.e., Ellsberg 1961; Einhorn and Hogarth 1985; Luippold and Kida 2012). Ambiguity arises from insufficient information, and is influenced by the amount, type, reliability, and degree of conflict in available information, among other factors (Ellsberg 1961; Einhorn and Hogarth 1985). Prior auditing research, on balance, indicates that ambiguous information prompts auditors to exhibit higher due diligence and care when performing audit procedures (Zimbelman and Waller 1999; Bigus 2012). For example, Zimbelman and Waller (1999) found that auditors choose larger sample sizes under more ambiguous circumstances as compared with less ambiguous circumstances. Applied to the information-sharing context we explore here, these findings point to auditors raising potentially important issues when faced with issue ambiguity. However, Zimbelman and Waller (1999) studied a strategic interaction between an auditor and client in a lab setting with explicit incentives for correct identification of a misstatement. The study did not incorporate the supervision and evaluation aspects of hierarchical audit teams that can encourage lower-level auditors to withhold or distort audit issues such that audit leaders never learn of them (Rich et al. 1997; Gold et al. 2014; Nelson et al. 2016).

We expect that ambiguity aversion reduces an auditor’s willingness to report an issue when ambiguity is high. Ambiguity aversion refers to the desire to avoid processes involving inadequate information and unknown outcomes (Frisch and Baron 1988). Fear of negative evaluations can increase ambiguity aversion (Trautmann, Vieider, and Wakker 2008). Raising a potential audit issue may lead to unknown outcomes, including a possible need to extend or otherwise change planned audit procedures as well as unknown supervisor reactions. In our setting, auditors can avoid dealing with ambiguity by failing to report the issue. Doing so creates
a high level of certainty that there will be no negative leader reaction because the leader is unaware of the potential issue.

In addition, ambiguity provides cover for motivated reasoning (Pyszczynski and Greenberg 1987; Kadous, Kennedy, and Peecher 2003). Faced with information that may indicate a need for additional work, as well as risk of exposure to negative evaluation outcomes, auditors may prefer to believe that the issue is not important. It may be easier to justify not speaking up about more ambiguous issues because there is more room to rationalize that the issue may not be worth a supervisor’s time to discuss. In contrast, when an issue is less ambiguous, we expect that auditors will be more willing to speak up because PCAOB AS 10 requires them to do so. In such circumstances, auditors have less ability to rationalize failing to report the issue because doing so more clearly violates auditing standards. Discovery that an auditor was aware of a relevant and relatively unambiguous audit issue, but did not share it, would result in negative performance assessments. Based on the above reasoning, we propose the following hypothesis:

H1: Auditors are more willing to speak up to leaders about potentially important audit issues when the issues are less ambiguous versus more ambiguous.

Voice and Leadership

While the presence of audit leaders highlights the supervision and evaluation aspect of hierarchical audit teams that can dampen voice behaviors, leaders do more than evaluate performance. Generally, leaders are also responsible for setting goals that motivate staff (Kotter 2001), and PCAOB AS 10 specifically charges audit team leaders with these responsibilities (PCAOB 2010). Among the many ways that individuals can be motivated, intrinsic and extrinsic motivations are among the most extensively studied (Cerasoli, Nicklin, and Ford 2014). Intrinsic
motivation refers to individuals’ drive to engage in activities for the internal rewards that they bring, including knowledge acquisition and personal development, whereas extrinsic motivation refers to individuals’ drive to engage in activities for external rewards such as compensation and recognition (Ryan and Deci 2000). For example, an auditor’s intrinsic motivation will drive her to ask for a tough assignment because she enjoys a challenge and the opportunity to learn, but her extrinsic motivation will drive her to ask for a tough assignment because she thinks it will get her recognition and a promotion.

Individuals are motivated both intrinsically and extrinsically. When an individual’s intrinsic motivation is salient, she focuses on intrinsic rewards, and when her extrinsic motivation is salient, she focuses on extrinsic rewards. The extent to which a motivation is salient is influenced both by dispositional and situational factors. That is, individuals display stable intrinsic and extrinsic motivational orientations (Amabile, Hill, Hennessey and Tighe 1994), but they can also be temporarily oriented to a particular motivation type when contextual factors make it more salient (e.g., Amabile 1985; Kadous and Zhou 2016). In particular, contextual influences such as leader behavior can mute or amplify the effect of trait motivational orientations on behavior. For example, leaders can orient staff to take on intrinsic or extrinsic motivations either by setting intrinsic or extrinsic goals or by exhibiting intrinsic and extrinsic motivations (Oldham and Cummings 1996; Vansteenkiste, Simon, Lens, Sheldon, and Deci 2004; Vansteenkiste, Simons, Lens, Soenens and Matos 2005; Friedman, Deci, Elliot, Moller, and Aarts 2010).

Despite a wealth of literature indicating positive associations between intrinsic motivation and task performance (see Cerasoli et al. 2014), the auditing literature predominately focuses on extrinsic, rather than intrinsic, motivators (e.g., Nelson and Tan 2005; Peecher et al.
Extrinsic motivators sometimes increase audit quality and sometimes decrease it. For example, desire to avoid legal liability can cause auditors to increase professional skepticism (Blay 2005), but fear of losing a client can decrease professional skepticism (Farmer, Rittenberg, and Trompeter 1987; Gramling 1999).

In the context of speaking up to a leader with issues inconsistent with that leader’s preference, we expect auditors with extrinsically motivating leaders to self-censor and withhold potentially important issues. That is, because extrinsically motivating leaders signal the importance of rewards, auditors will be sensitive to how leaders reward information sharing. Nelson and Proell (2016) find that leaders give lower performance ratings to auditors raising issues inconsistent with a leader’s focus compared to auditors raising consistent issues. Accordingly, we expect auditors with extrinsically focused leaders to be hesitant to raise issues inconsistent with the leader’s focus for fear of poor leader reactions and negative performance assessments.

In contrast, we expect that auditors with intrinsically motivating leaders will be more likely to speak up and share information because leaders who focus on intrinsic motivation signal the importance of learning and building general audit knowledge. As raising the issue will trigger feedback and discussion leading to knowledge acquisition, auditors should be more willing to speak up to intrinsically motivating leaders in order to get feedback. In addition, the leader’s focus on intrinsic motivators may orient auditors to their own intrinsic motivation, piquing their curiosity about the audit issue, and encouraging them to engage in the learning process. Finally, intrinsically motivated auditors should pay less attention to extrinsic rewards, such as performance evaluations, compared to extrinsically motivated auditors and therefore may be less
inclined to consider leader reactions. Based on the above reasoning, we propose the following hypothesis:

H2: Auditors are more willing to speak up to leaders who motivate intrinsically than those who motivate extrinsically.

Voice, Ambiguity, and Leadership

Hypothesis 2 states that when auditors look to their leaders they are more likely speak up to a leader who motivates intrinsically versus extrinsically. We predict that this difference will be more prominent when an issue is more ambiguous. Prior research indicates that leaders take on a more important role and have more influence as uncertainty and ambiguity increase (Hollander 1961; Shamir and Howell 1999; Waldman, Ramirez, House, and Puranam 2001; Pescosolido 2002; Howell and Shamir 2005). For example, group members are more likely to look to leaders to decide which emotional displays are appropriate under ambiguous versus unambiguous circumstances (Pescosolido 2002). While auditors are likely to take cues from their leaders as to which information is valued in all circumstances (Nelson and Proell 2016), we expect that leadership cues increase in importance when the issue to be reported is more ambiguous. Further, when an issue is relatively unambiguous, leader motivational behaviors should play a diminished role in determining auditors’ willingness to raise issues because failing to raise an issue more clearly relevant violates audit standards. Thus, auditors’ ability to rationalize not speaking up is

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1 This reasoning is consistent with findings linking transformational leadership to voice (Detert and Burris 1997). Specifically, transformational leaders motivate followers to move beyond their own self-interests via charisma, individual consideration, vision articulation, and intellectual stimulation (Bass 1999). On the other end of the leadership spectrum are transactional leaders. Transactional leaders use rewards and penalties (i.e., extrinsic motivators) to motivate followers toward leader goals (Bass 1999). While the motivating mechanisms behind transformational leadership are largely unexplored, there is some associational evidence that intrinsic motivation might play a role (Bono and Judge 2003, Piccolo and Colquitt 2006). Since transformational leadership has been linked to increased voice (Detert and Burris 2007), this research suggests the possibility that directly emphasizing intrinsic motivation can also lead to increased voice.
diminished as ambiguity is reduced. Accordingly, we hypothesize that the audit leader’s motivational focus interacts with issue ambiguity on auditor voice. Stated formally:

\[ H3: \text{Auditors are more willing to speak up to leaders who motivate intrinsically versus extrinsically, and this difference will be larger when the audit issue is more ambiguous than when it is less ambiguous.} \]

III. EMPIRICAL EVIDENCE

Study 1: Effect of Audit Issue Ambiguity on Auditors’ Willingness to Speak Up

As we note above, prior accounting research demonstrates that auditors exhibit more care when faced with ambiguous circumstances (e.g., Zimbelman & Waller 2009). In our context, these findings suggest that auditors should speak up more when facing ambiguous circumstances, contrary to our hypothesis. Thus, we sought to first establish that ambiguity directly impacts speaking up before proceeding to testing for a potential interaction. Accordingly, Study 1 tests H1 in an experiment in which accounting alumni with audit experience assess a typical staff auditor’s willingness to report to his senior an issue that arises late in an audit of inventory. The issue potentially has audit implications that could increase the cost and quality of the audit.

Method

Overview and Participants. Study 1 employs a $1 \times 2$ (issue ambiguity: higher versus lower) between-participants experimental design. We manipulate issue ambiguity by varying both the reliability of information source and whether there is an information conflict in the new information that came to light during the audit. Fifty-one accounting alumni completed the study on-line. Participants have an average of 11.8 months of audit work experience and either 1) are currently in audit practice, 2) recently left audit practice, or 3) are masters of accounting students who have completed a public accounting internship.
**Procedure and Task.** The task, adapted from Nelson et al. (2016), asks participants to imagine a staff auditor who is in charge of carrying out internal controls and substantive testing of inventory on the audit of a large medical device manufacturer. The manager and partner had finalized the substantive testing plan and had emphasized to the team that the client is low risk and that they (team leadership) are exceptionally concerned about audit costs. Participants then read, “Mid-way through the audit, the entire team was working long hours and was slightly behind schedule when the staff auditor came across some potentially important information in a casual conversation with a low-level client employee.” They were told that the potentially important issue, if true, implies changes to the audit team’s approach to inventory testing that would “increase audit cost by increasing planned audit hours, but also could potentially increase audit quality.”

**Independent Variable.** We manipulate *issue ambiguity* between participants by varying the source credibility of the new information that auditors learned during the audit as well as whether that information conflicts with information provided by another employee. Appendix A shows the full manipulation. We chose to manipulate issue ambiguity via source credibility, as well as whether there is conflicting information, because both are drivers of ambiguity (Ellsberg 1961; Einhorn and Hogarth 1985). Moreover, variation in source credibility and the degree to which information conflicts is common in the auditing environment. To ensure that participants attended to the manipulation, we programmed the instrument such that participants could not advance through the experiment without correctly identifying whether the information was from a more or less reliable source.

**Dependent Variable.** Following Nelson et al. (2016), our primary dependent measure asked participants to “… rate, on a scale from 0 (Not at all) to 100 (Very), how comfortable you
think a typical staff auditor in this circumstance would be suggesting to their senior that additional procedures may be needed to investigate the employee’s information and inventory sampling might need to be increased, increasing audit cost but also potentially increasing audit quality.\(^2\) Because speaking up and related behaviors are thought to be risky (MacNab and Worthley 2008), we measure “comfort in speaking up”, rather than “willingness to speak up”. Psychological comfort is linked to behavioral action (Elliot and Devine 1994) and assessing comfort increases measurement sensitivity to treatment differences (Nelson et al. 2016). We ask about a typical auditor’s behavior, rather than about the participant’s own behavior, to avoid self-presentation effects that could bias experimental results (Gronewold, Gold, and Salterio 2013).\(^3\) Nelson et al. (2016) report identical inferences for studies measuring another auditors’ comfort in speaking up and one’s own willingness to speak up using similar case materials.

**Results**

Our first hypothesis states that auditors will be more willing to speak up to leaders about a potentially important audit issue when the issue is less ambiguous versus more ambiguous. In support of H1, participants in the lower ambiguity condition assessed the staff auditor as more likely to speak up (\(n = 26; M = 68.65\)) than did those in the higher ambiguity condition (\(n = 25; M = 53.64\)) (\(t_{49} = 2.20, p = 0.03\)) (results not tabulated).\(^4\)

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\(^2\) While we describe the partner and manager as emphasizing the low risk nature of the audit and expressed concern for audit cost, in Study 1 we do not describe the senior to whom the staff person is potentially raising the issue.

\(^3\) Gronewold et al., (2013, 197) note that “studies show that for behaviors with moral overtones, people’s prediction of what others would do is more accurately correlated with others’ actual behavior than people’s prediction of what they themselves would do (Epley and Dunning 2000). The social desirability bias literature also indicates that indirect questions asking people to predict others’ behavior suffer from less social desirability bias compared to direct questions asking people to predict their own behavior (Fisher 1993; Fisher and Tellis 1998; Sherwood 1981).”

\(^4\) Because we conducted this study on-line, we could ensure that participants did not change responses to the first scenario after reading an alternative scenario. Accordingly, we also asked participants what their response would be given the alternative ambiguity manipulation. Analyzing the data within participants yields identical inferences to the reported between-participant results.
Study 2: Joint Effects of Leadership Focus and Issue Ambiguity on Auditors’ Willingness to Speak Up

Study 1 provides evidence that auditors are more willing to raise audit issues when those issues are less ambiguous. That study used a strong manipulation of ambiguity, using both the source credibility and information conflict dimensions of ambiguity. It is an open question as to whether a more nuanced ambiguity manipulation would diminish auditors’ willingness to speak up. Further, Study 1 asked participants about speaking up to a senior, but did not describe that senior’s leadership focus. Given the importance of leadership in auditing (Nelson et al. 2016), features of the leader may swamp any effects of ambiguity. Accordingly, in Study 2, we manipulate ambiguity using source credibility alone, and we manipulate how the leader motivates staff (intrinsically or extrinsically). This design enables us to test all hypotheses.

Method

Overview and Participants. Study 2 employs a 2 (issue ambiguity: higher versus lower ambiguity) × 2 (leadership focus: intrinsic versus extrinsic motivators) within-participants experimental design. We manipulate issue ambiguity by varying whether the source of the new information that auditors learned during the audit is unreliable (i.e., higher ambiguity) or reliable (i.e., lower ambiguity). We manipulate leadership focus by varying whether the senior in charge of the audit emphasizes personal and professional growth (intrinsic motivators) or career success (extrinsic motivators). One hundred seventeen staff auditors from two audit firms, with an average of 11.6 months of audit work experience, completed the study. Participants from one firm completed the experiment using paper and pencil instruments during a firm-sponsored training session, and participants from the other firm completed the materials on-line.5

5 There were no significant differences in responses of the groups, so we report the combined results.
**Procedure and Task.** The procedure and task were identical to that of Study 1, except as otherwise noted. We conducted both manipulations within-participants, meaning that participants responded to four scenarios. We counterbalanced the presentation order of the scenarios such that participants were randomly assigned to one of twenty-four different scenario orders. We included a manipulation check for the ambiguity manipulation in place of the comprehension check in Study 1.

**Independent Variables.** We manipulate *issue ambiguity* within participants as in Study 1, except that we only vary source credibility of the new information that auditors learned during the audit (see Appendix A). We manipulate *leadership focus* within participants at two levels. In the intrinsic motivation leadership focus condition, participants are told that the senior in charge of the audit emphasizes personal growth, including learning, curiosity, and self-improvement, while participants in the extrinsic motivation leadership focus condition are told that the senior emphasizes career success, including rewards and promotion. The aspects that are emphasized in the intrinsic condition (i.e., learning, curiosity, and self-improvement) are associated with an individual’s intrinsic motivation, whereas the aspects that are emphasized in the extrinsic condition (i.e., rewards and promotion) are associated with an individual’s extrinsic motivation (Lepper and Henderlong 2000, Ryan and Deci 2000). Appendix A shows the full manipulation.

**Dependent Variable.** We used the same dependent variable in Study 2 as was used in Study 1 except that we reference the “described senior” rather than just the “senior.”

**Results**

**Manipulation Checks.** Participants assessed the ambiguity of the “new audit information and potential implications” on a 101-point scale, ranging from 0 (not at all ambiguous) to 100 (extremely ambiguous) after reading the case materials and before assessing the dependent
measure. The issue ambiguity manipulation was successful. Participants assessed ambiguity significantly higher in the two higher ambiguity conditions ($M = 74.05$) than in the two lower ambiguity conditions ($M = 18.22, p < 0.01$). Leadership focus did not influence ratings of ambiguity ($p = 0.74$).

Participants also indicate whether the senior in the case emphasized that the staff auditor should focus on “improving themselves as auditors” or “getting promoted and increasing their salary.” Of 468 responses (117 participants responding to four scenarios), 95% were correct, indicating the manipulation of leadership focus was successful. Excluding the observations with incorrect responses does not change any reported inferences, so we include all observations in our analyses.

**Tests of Hypotheses.** Table 1, Panel A provides descriptive statistics for auditors’ assessments of the staff auditor’s comfort in speaking up in the case by condition. We base our tests of hypotheses on a repeated measures ANOVA model with issue ambiguity and leadership focus as repeated measures. Table 1, Panel B provides the repeated measures ANOVA and Figure 1 graphs cell means by condition.

[Insert Table 1 and Figure 1 here]

H1 predicts that auditors are more willing to speak to leaders about potentially important audit issues when the issue is less ambiguous. Consistent with this idea, Table 1, Panel A shows that participants assess higher comfort speaking up in the lower ambiguity condition ($M = 59.80$

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6 Including the order of scenarios in the model and allowing it to interact with our manipulations does not change inferences, so we report results based on the simpler model.
than in the higher ambiguity condition (M = 49.56). This main effect of issue ambiguity is significant ($p < 0.01$, Table 1, Panel B), supporting H1.\(^7\)

H2 predicts that auditors are more willing to speak up to leaders who motivate intrinsically versus extrinsically. Table 1, Panel A shows that participants assess higher comfort in speaking up to a leader who emphasizes intrinsic motivation (M= 64.26) than to a leader who emphasizes extrinsic motivation (M = 45.10). This main effect of leadership motivational focus is significant ($p < 0.01$, Table 1, Panel B), supporting H2.

H3 predicts that issue ambiguity and leadership focus interact such that the auditors are more willing to speak up to leaders who motivate with intrinsic goals than extrinsic goals and this difference is larger when the issue is more versus less ambiguous. Table 1, Panel B demonstrates that the disordinal interaction between leadership focus and issue ambiguity is not significant, and a review of the graphed cell means (Figure 1) confirms a pattern consistent with two main effects, but no interaction. We conclude that H3 is not supported.\(^8\) Instead, we find that

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\(^7\) Prior research indicates that patterns of participant responses are similar whether a dependent variable assesses how a typical auditor would respond versus how participants would (themselves) respond, and whether the dependent variable assesses auditors’ willingness to speak up or their comfort in speaking up (Gronewold et al. 2013, Nelson et al. 2016). Nonetheless, we replicated our test of H1 using the same Study 2 materials, except that we changed the dependent variable such that it assessed auditors’ own willingness to speak up and we only collected two conditions (higher and lower issue ambiguity, given an extrinsically motivating leader). We conducted this follow-up study with 45 staff auditors and found that auditors are more willing to speak up when the audit issue is less ambiguous (M = 84.27) than when it is more ambiguous (M = 72.04, $p < 0.001$). Notably, the overall average for these two cells in Study 2 is 39.52, while it is 78.16 in this follow-up study. This is consistent with the idea that social desirability bias inflates reports of speaking up, potentially obscuring significant differences with ceiling effects.

\(^8\) Our hypotheses jointly imply an ordinal interaction with contrast weights +2 for the Lower Ambiguity/Intrinsic Focus condition, +1 for the Higher Ambiguity/Intrinsic Focus condition, +1 for the Lower Ambiguity/Extrinsic Focus condition and -4 for the Higher Ambiguity/Extrinsic Focus condition. A contrast test based on these weights is significant ($p < 0.001$); however, the residual model variance is also significant ($p < 0.001$), indicating that the predicted pattern does not fully explain the model variance in that additional significant patterns remain after extracting the variance due to the contrast. Following Guggenmos, Piercey, and Agoglia (2016), we calculated the proportion of variance explained by our contrast as compared to all other non-error variance. Results indicate that our predicted interaction explains 19.9% of the total non-error variance in our study. In contrast, the two main effects jointly explain 25.5% of the total non-error variance. We conclude that the posited interaction does not adequately explain the data.
auditors are more likely to speak up when audit issues are less versus more ambiguous, and that leadership focused on intrinsic motivators is more likely to encourage speaking up than is leadership focused on extrinsic motivators, regardless of the ambiguity of the audit issue.

**Study 3: Disentangling leadership behavior from motivation**

Study 2 provides evidence that auditors are more willing to raise audit issues when audit leaders motivate staff intrinsically versus extrinsically, and that this effect holds across a range of issue ambiguity. Prior research indicates that employees are also more likely to speak up to leaders whose behaviors signal openness to change (e.g., Detert and Burris 2007). Thus, a potential alternative explanation for the Study 2, H2 results is that leaders who focus on intrinsic motivation may appear more open than leaders who focus on extrinsic motivation, and that it is leadership openness, rather than leadership focus on intrinsic motivation, that drives the result. In Study 3, we experimentally manipulate whether the staff auditor is focused on his intrinsic or extrinsic motivation *without* mentioning how the leader (i.e., the senior in charge) behaves. If leadership openness, rather than the leader’s focus on intrinsic motivation, solely drives the Study 2, H2 result, then we would not expect to observe an effect of staff auditors’ focus on their intrinsic motivation, compared to extrinsic motivation, on their willingness to speak up because the leader is not present. However, if the *motivational effects* of leaders are at least partially responsible for the Study 2, H2 result, then we should observe a greater willingness to speak up for staff auditors who focus on their intrinsic (versus extrinsic) motivation.

**Method**

**Overview and Participants.** Study 3 employs a $1 \times 3$ experimental design, varying (within participants) the *motivational orientation* (intrinsic, extrinsic, or none mentioned (i.e., control)) of the staff auditor identified in the case while holding issue ambiguity constant at a
higher level. Ninety-three accounting students (71% seniors, 29% graduate) from a large public university completed the study on-line. All participants had completed at least one public accounting audit internship, and 89% had accepted a full-time audit position.\footnote{Limiting analysis to observations from participants who had accepted a full-time audit position does not affect any of our inferences. Thus, we include all observations in the following data analyses.} Our use of interns as participants follows Libby, Bloomfield and Nelson’s (2002) recommendation that researchers refrain from using participants that are more qualified than necessary to complete the task. Audit interns serve as a good proxy for staff auditors because they perform many of the same tasks on audit engagements as audit staff (Hawkins, Keune, and Saunders 2015). Moreover, like staff, interns need to decide whether to raise audit issues to their superiors. Thus, interns’ willingness to speak up on audit issues is of direct interest, in itself.

**Procedure and Task.** The procedure and task were identical to that of Study 2, except as otherwise noted. All participants completed the study on-line. This allowed us to replace comprehension and manipulation checks with a requirement that participants could not advance without correctly identifying condition-relevant information, as in Study 1. We counterbalanced case order such that participants were randomly assigned to one of six orders.\footnote{Because all participants completed Study 3 on-line, we could ensure that they did not change responses to the first scenario after reading other scenarios. This allowed us to analyze responses to the first scenario between participants. Results of the between-participant analyses yield identical inferences to the reported within-participant analyses.}

**Independent Variable.** We manipulate the staff auditor’s *motivational orientation* within participants at three levels. We rely on the same intrinsic or extrinsic motivators (i.e., personal growth versus career success) that the audit senior focuses on in Study 2, but in Study 3 these items are used to describe how the staff auditor motivates himself. In the intrinsic motivation condition, rather than describing the senior, participants read that, “The staff auditor
has always been motivated through **personal and professional growth** by focusing on learning and improving himself.” In the extrinsic motivation condition, participants read that, “The **staff auditor** has always been motivated through **career success** by focusing on rewards and career advancement for himself.” We also include a control condition in which there is no mention of staff auditor motivation.

**Dependent Variable.** Participants rated “how willing you think the staff auditor described in this circumstance would be suggesting that additional procedures may be needed to investigate the employee's information and inventory sampling might need to be increased, increasing audit cost but also potentially increasing audit quality.” The endpoints were labeled “0: not at all willing to speak up” and “100: very willing to speak up,” and the midpoint was labeled “50: somewhat willing to speak up.”

**Results**

Table 2, Panel A provides descriptive statistics for auditors’ assessments of the staff auditor’s willingness to speak up, by condition. We base our tests of hypotheses on a repeated measures ANOVA model with the staff auditor’s motivational orientation as the repeated measure. Motivational orientation is significant in this model ($F_{2,184} = 68.17, p < 0.01$). Table 2, Panel B provides the contrasts testing the effect of the staff auditor’s motivation orientation on assessments of his willingness to speak up. The results confirm our expectations. Auditors who

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11 At the end of the experiment, we also asked participants whether: 1) they worked with each of the two types of auditors during their internship (scale ranging from “0: Never” to “100: All the time” with mid-point labeled “50: Occasionally”), 2) whether they were aware of staff auditors fitting that profile, and 3) how realistic the descriptions are (both scales ranging from “0: Not at all” to “100: Very much” with the midpoint labeled “50: Somewhat”). Participants reported working with both types of auditors, though marginally more with intrinsically motivated staff (M = 66.4) than extrinsically motivated staff (M = 59.4) ($p = 0.07$); they were marginally more aware of intrinsically motivated auditors (M = 71.4) than extrinsically motivated auditors (M = 65.5) ($p = 0.09$), and there was no significant difference in the realism of the two staff descriptions (M = 66.5 vs 68.7, $p = 0.47$).

12 Including the order of scenarios in the model and allowing it to interact with the manipulation does not change inferences, so we report results based on the simpler model.
are focused on their intrinsic motivation are viewed as more willing to speak up about the audit issue ($M = 67.54$) than are auditors who are focused on their extrinsic motivation ($M = 41.16, p < 0.01$) and auditors whose motivation is not described in the case ($M = 44.12, p < 0.01$). There is no difference in willingness to speak up between the control and extrinsic motivation conditions ($p = 0.24$). Thus, Study 3 provides evidence that motivational orientation directly impacts auditors’ willingness to speak up. This corroborates the conclusion from Study 2 that an audit leader’s motivational focus (intrinsic vs. extrinsic) influences speaking up.$^{13}$

[Insert Table 2 here]

**Study 4: Intrinsic Motivation and Speaking up on the Job**

Studies 2 and 3 provide evidence that auditors who are focused on their intrinsic motivation are more willing to speak up about potentially important audit issues than are extrinsically motivated auditors. Recall that individuals have stable trait level differences in the extent to which they are oriented towards their own intrinsic and extrinsic motivation (Amabile et al. 1994). Accordingly, it is possible to further demonstrate the link between intrinsic motivation and speaking up by measuring these trait orientations and surveying actual work behavior. While a survey does not, in itself, demonstrate the direction of causality, it complements laboratory experiments by contextualizing and generalizing experimental findings (e.g., Bloomfield, Nelson, and Soltes 2016). Thus, in Study 4, we conduct a survey that examines how individual differences in measured levels of intrinsic and extrinsic motivational orientation are associated with speaking up on the job.

**Method**

$^{13}$ While we cannot rule out that the Study 2, H2 result is partially caused by leader openness, Study 3 demonstrates that an auditor’s focus on intrinsic motivation is sufficient to significantly increase speaking up.
Overview and participants

We sought to determine whether intrinsic motivational orientation is associated with auditors’ real-world work behaviors and to determine whether these results generalize to non-auditors. Therefore, we had 68 auditors from two accounting firms and 100 non-auditors with work experience recruited on Amazon Mechanical Turk (MTurk) complete our survey on-line. Participating auditors have, on average, 18.7 months of audit experience, with 82.4% being audit staff and 17.6% being audit seniors. We screened participants recruited on MTurk such that all have work experience. Of these 100 participants, 81 have attended at least some college and 88 are currently employed, primarily in accounting/finance/management (27 participants), IT/software development (17 participants), and administration (13 participants). Excluding data from the 12 participants who are currently unemployed does not affect any of our inferences, so we include all observations in the analyses.

Measures

Trait Motivation. We measure participants’ trait levels of intrinsic and extrinsic motivational orientation using the Work Preference Inventory (WPI) (Amabile et al. 1994). The WPI is designed to assess stable individual differences in motivational orientation (the extent to which individuals typically focus on their intrinsic and extrinsic motivation). The WPI separately measures intrinsic and extrinsic motivational orientations with 15 items each. For each item in the WPI, participants indicate the extent to which the item describes them on a 4-point scale from 1 (never or almost never true of me) to 4 (always or almost always true of me). Prior research indicates that the levels of intrinsic and extrinsic motivational orientation as assessed by

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14 We appended the survey at the end of our computer-based instruments (only) used in Study 2 and in the follow-up study referenced in FN 7, so auditor participants completed the survey after an experiment. Non-auditor participants completed only the survey.
the WPI are independent of one another (Amabile et al. 1994). That is, intrinsic and extrinsic motivational orientations are not polar opposites and individuals can score high or low on both.\textsuperscript{15} Untabulated analyses yield alpha coefficients for the intrinsic and extrinsic motivational orientation scales of 0.86 and 0.72, respectively, both indicating reasonable internal consistency (Cortina 1993).

Our theory predicts that we will observe a positive association between the trait measure of intrinsic motivational orientation and speaking up behavior, and that we will not observe a significant association between the trait measure of extrinsic motivational orientation and speaking up behavior. Such findings would corroborate the findings of Studies 2 and 3 that focusing auditors on their intrinsic (but not extrinsic) motivation leads to increased speaking up.

**Speaking up.** We asked participants to report how much they speak up at work using seven measures adapted from Van Dyne and Lepine (1998) and Nelson et al. (2016). These measures address a variety of ways of speaking up, including challenging a supervisor, offering suggestions to a team, and sharing one’s unpopular perspective. Appendix B lists the seven speaking up measures. A confirmatory factor analysis yields one factor with an eigenvalue of 5.11 that explains 73.1% of the cumulative variance. Using a varimax rotation, the rotated loadings of the seven measures range from 0.66 to 0.92, indicating that each measure has a meaningful factor loading (Hatcher 1994). Further, the alpha coefficient for this construct is 0.93, indicating good internal consistency (Cortina 1993). We use the factor score as our dependent measure of speaking up.

**Results**

\textsuperscript{15} This is consistent with our observation that the two trait-level motivational orientation scales are not significantly correlated in our sample ($p = 0.89$).
Table 3 reports the results of a regression for the speaking up measure on our two trait motivational orientations as well as on population.\textsuperscript{16} Overall, we find that speaking up behavior is significantly positively correlated with trait levels of intrinsic motivational orientation ($p < 0.01$) but is uncorrelated with trait levels of extrinsic motivational orientation ($p = 0.38$). The results hold for each individual measure of speaking up and are robust to population.\textsuperscript{17} That is, we obtain the same result when we look at only auditors or only Mturk participants.

Interestingly, we also find auditors are more likely to speak up than are Mturk participants ($p = 0.003$).\textsuperscript{18} This is consistent with PCAOB AS 10 requiring auditors to raise potentially important issues, making speaking up an “in-role” behavior for auditors whereas in most fields, speaking up is a voluntary “extra-role” citizenship behavior. Prior research indicates that in-role behaviors are more likely to be performed than extra-role behaviors (Morrison 1994; Tepper, Lockhart and Hoobler 2001; Coyle-Shapiro, Kessler and Purcell 2004; McAllister, Kamdar, Morrison and Turban 2007). The survey evidence complements Studies 2 and 3 in that it directly measures participants’ intrinsic and extrinsic motivational orientations and shows that results generalize to real-world work behavior.

[Insert Table 3 here]

**IV. CONCLUSION**

Because most audit evidence is gathered by lower level audit team members, upward communication of potential audit issues is critical to effective and efficient audits (Solomon

\textsuperscript{16} Interactions of the two motivational orientations with population are not significant, so we report the simpler model.

\textsuperscript{17} Extrinsic motivational orientation is marginally positively associated ($p = 0.07$) with the first speak up measure: “I sometimes challenge my supervisor with perspectives that my supervisor disagrees with,” but correlations are insignificant for every other measure. Intrinsic motivational orientation is significantly positively associated with each speak up measure ($p < 0.01$).

\textsuperscript{18} Further analysis of the Mturk population shows that amount of education is positively associated with speaking up ($p = 0.01$).
Accordingly, it is important to understand features of the task environment that inhibit and promote staff auditors’ willingness to speak up about potentially important audit issues. We provide evidence that issue ambiguity influences speaking up. Auditors are more likely to speak up when the audit issue is less ambiguous than when it is more ambiguous.

While it is encouraging that auditors are more willing to speak up when it is clearer that the issue impacts audit quality, we note two inter-related concerns. First, relatively inexperienced auditors do the bulk of audit fieldwork, and so they are in the best position to learn of new audit issues (for example, in conversation with client employees). However, because of their lack of knowledge and experience, they are more likely to be unsure of the implications of potential audit issues that arise than are other auditors. Our study indicates that if they overestimate the ambiguity in audit issues, they are less likely to report them to their superiors, potentially threatening audit quality. Second, in Studies 1 and 2, we observe substantial unwillingness to speak up even when the issue is relatively unambiguous. This implies that important issues threatening audit quality are likely to go unreported, even when they are fairly clear.

Our research also demonstrates across three studies that auditor focus on intrinsic motivation increases auditors’ willingness to speak up, and it does so irrespective of whether the focus on intrinsic motivation stems from audit team leadership or from the auditor’s disposition. Our study thus offers a new solution to the problem of compromised audit quality due to underreporting of audit issues.

Our paper contributes to both the accounting and management literatures. First, while we expected that leadership focus would be associated with speaking up when the issue is more ambiguous, it is quite surprising to observe the same result when the issue is relatively
unambiguous. PCAOB AS 10 clearly states that auditors should raise potentially important issues, so we expected high reporting of the less ambiguous issue regardless of leadership focus. That we did not find this highlights that failing to speak up is problematic, and it corroborates the PCAOB’s assertions that audit firm management practices, including “tone at the top,” affect audit quality (PCAOB 2010). That is, even when faced with relatively unambiguous information that indicates a change to audit procedures may be required, audit staff continue to factor in leadership focus when deciding whether to speak up. Moreover, it is not just partner or manager leadership that matters—we demonstrate that audit team leadership by seniors matters.

Second, we provide evidence that firms can improve audit quality and compliance with PCAOB AS 10 by paying attention to leader motivational focus. Although the supervision and evaluation inherent in hierarchical audit teams can suppress upward audit communication (Nelson et al. 2016), audit leaders can increase upward communication by eliciting audit team members’ intrinsic motivations. Accordingly, we provide a complementary and inexpensive tool to the regulatory penalties currently in use and the financial rewards suggested by Peecher et al. (2013) for increasing audit standard compliance.

Third, while prior research indicates that auditors do not always speak up to share information (e.g., Gold et al. 2014; Gissel and Johnstone 2016; Nelson et al. 2016), there are relatively few studies examining informal upward communication. Our research contributes to this line of research by examining two previously unexplored determinants of information sharing. It specifically answers the call by Nelson et al. (2016) to investigate issue ambiguity, a common auditing environment feature. Along these lines, our research suggests the possibility that while auditors may apply more care to evidence resulting from planned audit procedures under ambiguity, staff auditors’ reluctance to communicate upward evidence challenging the
status quo may result in less effective audit procedures. Accordingly, ambiguity may indeed lead to lower audit quality than previously recognized.

Finally, prior management research has largely avoided examining how characteristics of issues affect employee willingness to speak up. Our finding that issue ambiguity dampens voice behaviors suggests a potentially fruitful path for future management research looking into voice determinants. In addition, while prior management research has confirmed the importance of leaders in the informal information exchange process, most of that literature focuses on general leadership types rather than on specific leadership behaviors (Proell et al. 2016). Our results point to specific behaviors that leaders can exhibit to encourage open information exchange and is the first to establish a link between intrinsic motivation and voice behaviors.
Appendix A—Text of Manipulations

Study 1 Manipulations

<table>
<thead>
<tr>
<th>Condition</th>
<th>What Participants Read</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Ambiguity</td>
<td>Low level employees can be good or poor sources of information that auditors may or may not be able to rely upon. In this case, the low-level employee providing the potential information is not someone &quot;in the know&quot; and could be considered <strong>unreliable</strong>. In addition, the statement by the low-level employee providing the potential information was contradicted by another low-level employee. Thus, it seems <strong>very unclear</strong> if the employee’s statement is true. If the employee’s statement were to be true, there might be audit approach implications that raise audit cost and quality (that is also unclear).</td>
</tr>
<tr>
<td>Low Ambiguity</td>
<td>Low level employees can be good or poor sources of information that auditors may or may not be able to rely upon. In this case, the low-level employee providing the potential information is someone &quot;in the know&quot; and could be considered <strong>reliable</strong>. In addition, the statement by the low-level employee who provided the potential information was supported by three other low level employees. Thus, it seems <strong>very clear</strong> that the employee’s statement is true. Given the employee’s statement is true, there might be audit approach implications that raise audit cost and quality (that is unclear).</td>
</tr>
</tbody>
</table>

Study 2 Manipulations

<table>
<thead>
<tr>
<th>Condition</th>
<th>What Participants Read</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Ambiguity</td>
<td>The low level employee who provided the potential information is not someone “in the know” and could be considered <strong>unreliable</strong>. Thus, it is <strong>highly ambiguous</strong> as to whether the employee’s statement is true. If the employee’s statement were to be true, there might be audit approach implications that raise audit cost and quality (it is unclear).</td>
</tr>
<tr>
<td>Low Ambiguity</td>
<td>The low level employee who provided the potential information is someone “in the know” and should be considered <strong>reliable</strong>. Thus, it is <strong>not at all ambiguous</strong> as to whether the employee’s statement is true. Given the employee’s statement is true, there is <strong>very likely to</strong> be audit approach implications that raise audit cost and quality.</td>
</tr>
<tr>
<td>Intrinsic Motivation Leadership Focus</td>
<td>The <strong>senior</strong> in charge of the audit has always <strong>emphasized</strong> personal and professional growth by suggesting staff focus on learning and improving themselves. He encourages audit staff to keep in mind budgets while <strong>satisfying their curiosity</strong> to learn about and truly understand the client’s business, think about audit issues critically, seize opportunities to increase analytical skills, and take on complex difficult tasks.</td>
</tr>
<tr>
<td>Extrinsic Motivation Leadership Focus</td>
<td>The <strong>senior</strong> in charge of the audit has always <strong>emphasized</strong> career success by suggesting that audit staff focus on rewards and career advancement. He encourages audit staff to keep in mind budgets while <strong>having a clear promotion goal</strong>, ensure decent salary growth, and look out for career opportunities both inside and outside the firm.</td>
</tr>
</tbody>
</table>
## Appendix B—Speaking Up Measures

<table>
<thead>
<tr>
<th>Speaking Up Measures</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) I sometimes challenge my supervisor with perspectives that my supervisor disagrees with.</td>
<td></td>
</tr>
<tr>
<td>2) When I have suggestions, I provide them to my colleagues without reluctance.</td>
<td></td>
</tr>
<tr>
<td>3) I speak up to share my opinion even though it might not be received well by my supervisor.</td>
<td></td>
</tr>
<tr>
<td>4) I speak up in my work teams when I have something to say.</td>
<td></td>
</tr>
<tr>
<td>5) I speak up and encourage others in my work teams to get involved in issues that affect the teams.</td>
<td></td>
</tr>
<tr>
<td>6) I communicate my opinions about work issues to my colleagues even if my opinion is different and others disagree with me.</td>
<td></td>
</tr>
<tr>
<td>7) Even when my perspective is unpopular, I share it with my supervisors.</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
Participants rate their agreement with each statement on a 101-point scale from 0 (strongly disagree) to 100 (strongly agree).
REFERENCES


Figure 1 Joint Effect of Issue Ambiguity and Leadership Focus on Auditors’ Willingness to Raise Audit Issues
Table 1
Effects of issue ambiguity and leadership focus on assessments of the staff auditor’s comfort in speaking up about the audit issue (Study 2)

Panel A. Mean (Standard Deviation of) assessments of comfort

<table>
<thead>
<tr>
<th></th>
<th>Intrinsic Motivation Leadership Focus</th>
<th>Extrinsic Motivation Leadership Focus</th>
<th>Row Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher Issue</td>
<td>59.59 (22.41)</td>
<td>39.53 (24.10)</td>
<td>49.56</td>
</tr>
<tr>
<td>Ambiguity</td>
<td>n = 117</td>
<td>n = 117</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>68.92 (23.63)</td>
<td>50.68 (26.56)</td>
<td>59.80</td>
</tr>
<tr>
<td>Issue Ambiguity</td>
<td>n = 117</td>
<td>n = 117</td>
<td>n = 234</td>
</tr>
<tr>
<td></td>
<td>64.26 (23.45)</td>
<td>45.10 (25.91)</td>
<td>54.68</td>
</tr>
<tr>
<td></td>
<td>n = 234</td>
<td>n = 234</td>
<td>n = 468</td>
</tr>
</tbody>
</table>

Panel B. Results of repeated measure ANOVA examining effects of information ambiguity and leadership

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Sum of Squares</th>
<th>F</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambiguity (H1)</td>
<td>1</td>
<td>12,267</td>
<td>38.36</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Leadership (H2)</td>
<td>1</td>
<td>42,924</td>
<td>134.24</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Leadership × Ambiguity (H3)</td>
<td>1</td>
<td>96</td>
<td>0.30</td>
<td>0.58</td>
</tr>
<tr>
<td>Participants</td>
<td>116</td>
<td>160,948</td>
<td>4.34</td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td>Error</td>
<td>348</td>
<td>111,277</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table Notes:
This table reports descriptive statistics (Panel A) and a repeated measures ANOVA model for Study 2.

The dependent measure asks participants to rate, on a scale from 0 (Not at all) to 100 (Very), “how comfortable you think a typical staff auditor in this circumstance would be suggesting to the described senior that additional procedures may be needed to investigate the employee’s information and inventory sampling might need to be increased, increasing audit cost but also potentially increasing audit quality.”

In the higher issue ambiguity conditions, the information source was described as unreliable. In the lower issue ambiguity conditions, the information source was described as reliable. In the intrinsic motivation leadership focus condition the leader emphasizes personal and professional growth. In the extrinsic motivation leadership focus conditions the leader emphasizes career success. See Appendix A for wording of manipulations. Both manipulations were conducted within participants.
Table 2
Effects of staff auditor’s motivational orientation on assessed willingness to speak up about an audit issue (Study 3)

Panel A. Mean (Standard Deviation of) assessment of the staff auditor's willingness to speak up

<table>
<thead>
<tr>
<th>Staff Auditor’s Motivational Orientation</th>
<th>Willingness to Speak Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic</td>
<td>67.54 (16.75)</td>
</tr>
<tr>
<td></td>
<td>n = 93</td>
</tr>
<tr>
<td>Extrinsic</td>
<td>41.16 (21.82)</td>
</tr>
<tr>
<td></td>
<td>n = 93</td>
</tr>
<tr>
<td>Control</td>
<td>44.12 (17.30)</td>
</tr>
<tr>
<td></td>
<td>n = 93</td>
</tr>
</tbody>
</table>

Panel B. Contrasts based on repeated measures ANOVA for assessments of the staff auditor’s willingness to speak up

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Sum of Squares</th>
<th>F</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic vs. Control</td>
<td>1</td>
<td>25,504</td>
<td>90.25</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Extrinsic vs. Control</td>
<td>1</td>
<td>407</td>
<td>1.44</td>
<td>0.23</td>
</tr>
<tr>
<td>Intrinsic vs. Extrinsic</td>
<td>1</td>
<td>32,351</td>
<td>114.48</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Error</td>
<td>184</td>
<td>51,995</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table Notes:
This table reports descriptive statistics (Panel A) and contrasts based on a repeated measures ANOVA model for Study 3.

The dependent measure asks participants to assess, on a scale from 0 (not at all willing…) to 100 (very willing) “how willing you think the staff auditor described in this circumstance would be suggesting that additional procedures may be needed to investigate the employee's information and inventory sampling might need to be increased, increasing audit cost but also potentially increasing audit quality.”

The staff auditor’s motivational orientation was manipulated at three levels: intrinsic, extrinsic, or control. In the intrinsic condition, the staff auditor was described as having “always been motivated through personal and professional growth by focusing on learning and improving himself.” In the extrinsic motivation condition, the staff auditor was described as having “always been motivated through career success by focusing on rewards and career advancement for himself.” The control condition made no mention staff auditor motivation.
Table 3
Regression of speaking up measure on trait-level motivational orientations and self-reported speaking up behavior (Study 4)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Predicted Sign</th>
<th>Speak Up$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Motivational Orientation</td>
<td>+</td>
<td>1.24***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.15)</td>
</tr>
<tr>
<td>Extrinsic Motivational Orientation</td>
<td></td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.17)</td>
</tr>
<tr>
<td>Auditor</td>
<td></td>
<td>0.39***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.13)</td>
</tr>
<tr>
<td>Adjusted R-square</td>
<td></td>
<td>33.60%</td>
</tr>
<tr>
<td>Sample size</td>
<td></td>
<td>168</td>
</tr>
</tbody>
</table>

Notes:
The dependent variable, speaking up behavior, is a latent variable based on factor analysis of the seven speak up measures listed in Appendix B.

Intrinsic Motivational Orientation and Extrinsic Motivational Orientation are measured using the Work Preference Inventory (WPI) (Amabile et al. 1994). The WPI separately measures intrinsic and extrinsic motivational orientations with 15 items for each construct. The WPI assesses stable individual differences in the extent to which individuals view themselves as intrinsically and extrinsically motivated.

Auditor is a dummy variable that equals one if the participant is an auditor, zero otherwise.

$^a$ This column reports coefficients for each independent variable and its related standard error (in parentheses).

*** indicates two-tailed significance level at less than 1%.