

Whistle While You Work? The Relational Determinants of Reporting Wrongdoing\*

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## ABSTRACT

Although much of the misconduct that occurs within organizations is detected by other employees, many of those witnesses do not “blow the whistle” on their colleagues. Their reluctance may be due in part to the relationships in which employees are embedded within their organizations. In this paper, we theorize that social factors can interact to facilitate or inhibit whistleblowing within organizations. We contend that employees respond differently when the wrongdoing occurs either inside or outside of their workgroups, and that this distinction is moderated by the internal cohesion of those workgroups. When internal cohesion is high, individuals are less likely to report wrongdoing conducted by other members of the workgroup; however, high cohesion also promotes willingness to report wrongdoing observed outside the workgroup. Using unique data on observed and hypothetical whistleblowing by 33,755 US federal employees in 24 departments and agencies, we provide support for our arguments and show how competing explanations of whistleblowing can be integrated by situating them in particular social contexts. Together, these results reveal trade-offs in the detection of misconduct and help explain why wrongdoing in organizations may be so difficult to eradicate.

Wrongdoing is endemic to organizations (Greve, Palmer, and Pozner, 2010; Palmer, 2012; Palmer, Smith-Crowe, and Greenwood, 2016) and it is estimated that US organizations lose five percent of their annual revenues to employee fraud despite internal anti-fraud policies and control systems (Association of Certified Fraud Examiners, 2018). While firms increasingly rely on technologies to monitor employee misconduct, most monitoring and detection is still conducted by employees in the form of internal whistleblowing (Dyck, Morse, and Zingales, 2010; Pierce, Snow, and McAfee, 2015), defined as a member of an organization reporting the illegal, immoral, or illegitimate work practices of another member to organizational authorities (Near and Miceli, 1985). Such reports can help to halt or deter harmful malfeasance (Miethe and Rothschild, 1994; Ashforth and Anand, 2003).

For organizations to gain that benefit, however, employees must willingly surveil and report on co-workers with whom they commonly share personal relationships (Treviño & Victor, 1992; Waytz, Dungan, & Young, 2013). Yet, employees could be reticent to report on those with whom they share close ties (Brass, Butterfield, and Skaggs, 1998). This dilemma may be exacerbated by current organizational trends: as organizations increasingly recognize the performance benefits of cohesive and collaborative teams and workgroups, they may simultaneously be fostering an environment in which employees are increasingly unlikely to blow the whistle.

Research on whistleblowing therefore requires understanding the relational and social context of potential informants. In this paper, we develop a theory that accounts for the roles of group cohesion and social distance in whistleblowing. Whether the wrongdoing is perpetrated by a member of one's own social group—that is, within the same workgroup or team—or of a distal outgroup within the organization affects an individual's decision to report it. Within workgroups,

high cohesion leads to greater commitment to the group and an unwillingness to report a group member's malfeasance. But cohesive groups may also provide security against retaliation should one report wrongdoers elsewhere in the organization, increasing willingness to report non-group members. Together, we show that competing theories of whistleblowing can be integrated by situating them within particular social contexts.

We investigate this theory using unique data from the 2010 Merit Principles Survey (MPS), which contains information on whistleblowing for 33,755 federal employees across 24 departments and agencies. The survey allows us to examine not only actual whistleblowing decisions but also the respondents' willingness to report hypothetical misconduct. Importantly, the MPS identifies where in the organization the wrongdoing did or might occur, along with information about workgroup dynamics. To enrich our understanding of decisions to report wrongdoing, we use partial least squares structural equation models to investigate factors that influenced respondents' decision making.

We contribute to several areas of research. First, scholars of whistleblowing have repeatedly noted the absence of research on how social relationships may impact reporting (Brass, Butterfield, and Skaggs, 1998; Mesmer-Magnus and Viswesvaran, 2005; Miceli, Near, and Dworkin, 2008; Greve, Palmer, and Pozner, 2010). By focusing on the interpersonal environment in which whistleblowing decisions take place, we develop a social theory of whistleblowing. Second, this work adds to a growing literature on organizational wrongdoing—increasingly recognized as a common part of organizational behavior (Palmer, 2012; Aven, 2015; Palmer, Smith-Crowe, and Greenwood, 2016; Yenkey, 2018; Aven, Morse, and Iorio, 2019; Mohliver, 2019)—helping to clarify one reason why wrongdoing may be so difficult to prevent. Finally, this work reveals a trade-off that managers must consider when seeking to

combat workplace wrongdoing: increasing the likelihood of one type of wrongdoing being reported simultaneously decreases that of another.

## THE SOCIAL EMBEDDEDNESS OF WHISTLEBLOWING

Although scholars have emphasized the effects of social relationships on the perpetration of misconduct (Palmer and Yenkey, 2015; Yenkey, 2018; Aven, Morse, and Iorio, 2019), the role of interpersonal factors in reporting misconduct is not well understood. Yet whistleblowing is fundamentally a social behavior; it involves one individual reporting one or more others with whom he or she likely shares a professional—if not personal—relationship. Given that whistleblowing can lead to the alleged perpetrator being punished or even prosecuted, it is likely to elicit reactions, not just from the person reported, but also from others within the organization, such as those affected by the perpetrator's misconduct or those with ties to the whistleblower, the perpetrator, or both. Consideration of others' likely reactions may influence whether employees with knowledge of misconduct are willing to report it. Hence, social relationships with the perpetrator and mutual colleagues within the organization are important factors in the decision of whether or not to blow the whistle on a coworker.

Understanding how social relationships influence whistleblowing therefore requires understanding how patterns of relations vary within organizations. Organizations are complex social environments in which both professional and personal relationships develop, some of which are socially proximate and entail regular interaction while others are socially distant and entail little or no interaction (Feld, 1981). An increasingly common means by which organizations structure work and roles is through internal groups or teams such as working groups, project teams, and committees (Oh, Chung, and Labianca, 2004). Members of these groups are generally assigned by the organization, regularly interact, and often collaborate. As such, groups often become the foci of relationships and a basis of social distance between

employees (Lawler, Thye, and Yoon, 2000). Although nested within and part of the organization, groups are distinct, bounded social units and members are likely to form independent feelings and commitments to them (McPherson and Smith-Lovin, 2002; Oh, Chung, and Labianca, 2004).

Groups structure patterns of relationships and shape members' social environments, perceptions, and identities. Groups maintain boundaries that categorize individuals as being members or non-members (McPherson and Smith-Lovin, 2002; Oh, Chung, and Labianca, 2004). Thus, even within an organization, members of a certain group will tend to privilege each other over others (Tajfel et al., 1971; Granovetter, 1985; Brewer, 1999). For instance, Yenkey (2018) found that individuals were less likely to attribute blame for misconduct when the perpetrator was a fellow group member. In addition, group members tend to share greater connections with each other than with others outside the group (McPherson and Smith-Lovin, 2002). Workgroup and team members interact regularly—often daily—which can facilitate personal and informal relations beyond the formal or professional (Feld, 1982; Kleinbaum, Stuart, and Tushman, 2013). Collaborating on tasks or projects requires coordination and interaction, which also promotes a sense of belonging to the group. Therefore, group members may be reluctant to jeopardize their relationships and group membership by reporting misconduct inside the group. Finally, groups can also develop intense commitment, especially through dense intra-group ties, which allow members to monitor and enforce standards of behavior (Aven, 2015). Strong relationships themselves have also been found to undermine reporting of misconduct, even for those tasked with monitoring it (Aven, Morse, and Iorio, 2019).

All told, the social distance experienced between members and nongroup members can lead to different attitudes and behaviors towards misconduct. Responses to a wrongdoing—that

is, whistleblowing—will therefore likely differ based on whether it is committed by a fellow group member or someone outside the group. Nevertheless, an important consideration for the effects of group boundaries on willingness to report misconduct is predicated on the quality of those relationships. For instance, relationships vary in their strength (Granovetter, 1973), in their affect—such as negative or positive—and in their reinforcement by others (Simmel, 1950; Krackhardt and Handcock, 2007). Consequently, responses to misconduct committed by those inside an employee's group versus by those outside an employee's group are also likely contingent upon characteristics of the employee's relationship to other members of the group.

#### GROUP COHESION AND MISCONDUCT

Groups can be characterized in terms of member behaviors (such as helping and cooperation) and member attitudes (such as trust and liking). The construct of *group cohesion* captures both dimensions of group dynamics (Lawler, Thye, and Yoon, 2000). In particular, group cohesion distinguishes between groups that are high-functioning and whose members feel positively about each other, and groups that neither work well together nor share positive affect towards one another. High group cohesion has been found to determine member commitment, positive affect, and deference towards the group (Lawler, Thye, and Yoon, 2000; McPherson and Smith-Lovin, 2002).

On the one hand, there are reasons to believe that group cohesion may increase employees' willingness to blow the whistle. Strong interpersonal connections and trust likely lead potential whistleblowers to consider themselves assured of their place in the organization and shielded by the support of fellow group members. Such employees might not fear retaliation or ostracism were they to turn someone in. Findings that longer tenure within an organization is a predictor of whistleblowing are suggestive of this dynamic (Mesmer-Magnus and Viswesvaran, 2005). Similarly, high cohesion may foster a desire to maintain the trusting and cooperative

environment and thus a decreasing tolerance for members who act opportunistically (Brief and Motowidlo, 1986; Near and Miceli, 1996; Miceli, Near, and Dworkin, 2008). The feelings of social connection that cohesion promotes can activate a concern for fairness towards others and, in turn, increase the willingness to call out members engaged in misconduct (Waytz, Dungan, and Young, 2013). As a consequence, such policing might be looked upon favorably by other employees.

On the other hand, there are reasons to believe that group cohesion may inhibit would-be whistleblowers. The trust and loyalty that coincide with high cohesion can lead members to view reporting as a betrayal (Miethe and Rothschild, 1994; Ashforth and Anand, 2003; Cook, Hardin, and Levi, 2005). Whistleblowing studies find that people identify loyalty as the motive for not reporting someone (Waytz, Dungan, and Young, 2013). A study of Naval Academy midshipmen found that peer loyalty led 30 percent to not report witnessed honor code violations (Pershing, 2003) and police officers have been known to conceal the corruption and brutality of other officers (Skolnick, 2002). In general, being labeled a “snitch,” “rat,” or “tattle-tale” is a key concern for employees when considering blowing the whistle (Akerstrom, 1991; Whitman and Davis, 2007; Mayer et al., 2013; Dungan, Young, and Waytz, 2019). Cohesion could also increase concerns about stigma by association, whereby individuals become tainted by their closeness to wrongdoers (Pontikes, Negro, and Rao, 2010). Because such concerns may be elevated in cohesive groups, group pressure to not report may be especially strong. For all these reasons, high cohesion may undermine individuals’ willingness to blow the whistle.

In sum, there are reasons to believe that cohesion either promotes or inhibits whistleblowing. Based on our prior argument for the distinct effects on whistleblowing of wrongdoing being observed inside versus outside one’s group, we contend that social distance



interacts with group cohesion, helping to reconcile the potentially divergent effects of cohesion. In other words, the effects of group cohesion on whistleblowing are contingent on whether the misconduct took place inside or outside the group. Specifically, we contend that these two factors interact to such a degree that changes in one factor reverse the effects of the other: group cohesion will have converse effects when the misconduct occurs inside versus outside the group.

#### THE SOCIAL DETERMINANTS OF WHISTLEBLOWING

Highly cohesive groups develop strong intragroup norms of behavior, helping to align the members (Trevino and Victor, 1992; Ashforth and Anand, 2003). One common norm, often referred to as an anti-snitching norm, is the obligation to maintain loyalty to members of the group and not turn someone in for questionable behavior (Akerstrom, 1991; Whitman and Davis, 2007; Mayer et al., 2013). The more cohesive the group, the stronger such norms are likely to be (Akerstrom, 1991; McPherson and Smith-Lovin, 2002; Ashforth and Anand, 2003). A member of a cohesive group who reports wrongdoing by another member is therefore liable to experience harsh retaliation and ostracism from other members. Reporting without detection in such groups is often impossible, as dense ties enable monitoring of other group members (Aven, 2015). Moreover, research findings indicate that loyalty is an important factor in employee's willingness to report wrongdoing (Waytz, Dungan, and Young, 2013; Dungan, Young, and Waytz, 2019). Therefore, we expect that when wrongdoing is observed in highly cohesive groups, the likelihood of reporting will be low.

Organizational units lacking such high cohesion are likely to be competitive, atomistic, and even dysfunctional. These tensions have been found to manifest as rivalries or sabotage of other group members (Charness, Masclet, and Villeval, 2013). We expect these dynamics to be particularly prevalent within the group (as opposed to outside it) because negative sentiments and competition are most likely to arise among people who regularly interact; with spatial and

social distance, tensions and past conflicts tend to fade (Bergemann, 2017). Indeed, negative interpersonal sentiments that arise in closed groups can easily become more extreme through social reinforcement (Burt, 2005).

Such group dynamics would be consistent with observations that reporting wrongdoing can be a means of getting another person in trouble or an act of revenge (Culiberg & Mihelič, 2017; Miceli & Near, 1997; Nader, Petkas, & Blackwell, 1972). According to Miethe (1999: 86), “There is no doubt that whistleblowing for some employees provides a rather nefarious means of personal slander.” Such behavior has been found to be commonplace in the reporting of welfare fraud (Headworth, 2019) and in political denunciation (Fitzpatrick and Gellately, 1997; Bergemann, 2019). Thus, while high group cohesion may suppress whistleblowing, low group cohesion may be conducive to it. We therefore argue that when wrongdoing is observed in groups with low cohesion, the likelihood of reporting will be high.

What then about wrongdoing observed outside an employee’s group? Reporting should not run up against anti-snitching norms and other loyalty concerns which apply only within the group (Akerstrom, 1991; Whitman and Davis, 2007; Mayer et al., 2013; Dungan, Young, and Waytz, 2019). Nor should it be a function of competition or dysfunction, as interpersonal animosities primarily manifest within groups, not outside them.

Just as group cohesion leads to commitment to that group, so can it have spillover effects with regard to the organization as a whole (Mueller and Lawler, 1999). One such effect is greater commitment to and identification with the organization. Organizational identification is the “perception of oneness with or belongingness to an organization, where the individual defines him or herself in terms of the organization(s) in which he or she is a member” (Mael & Ashforth, 1992: 104). Organizational identification has been shown to increase with workgroup attachment

(Ricketta, 2005) and the development of intra-organizational networks (Jones and Volpe, 2011). In other words, identification with the organization can arise out of the concrete, positive interactions with the members of one's workgroup within that organization. An employee perceiving wrongdoing outside his or her group may then feel motivated to correct it in order to defend and improve the organization.

Beyond the effect of organizational commitment, highly cohesive groups can also facilitate the reporting of misconduct of nongroup members, as belonging to a cohesive group may decrease fears of retaliation. When members feel safely ensconced within their group and report on wrongdoing outside the group, they are unlikely to experience reprisal, such as shunning, from the group and, in fact, the group may even serve to shield them from backlash from nongroup members. This sense of security may help people to feel more comfortable speaking up (Edmondson, Kramer, and Cook, 2004), and those who feel they have a strong "standing" and are not on the social fringe are more likely to blow the whistle (Miethe and Rothschild, 1994).<sup>1</sup>

This perspective—that high group cohesion leads to the reporting of wrongdoing committed by those outside the employee's workgroup—helps to situate one of the prevailing explanations for whistleblowing in the literature; namely, that reporting is often done out of a

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<sup>1</sup> Another possible explanation for high group cohesion leading to a high likelihood of reporting outside the group could be intergroup competition. However, we find this to be generally unlikely. In many organizations, competition between workgroups or teams is not particularly salient, as different groups tend to have different functions or work on different projects. Intergroup competition tends to arise when groups compete for resources (Nagel and Olzak, 1982), which is also not especially visible in many organizations. Competition and rivalry are much more common within groups than between them. In the data we investigate on whistleblowing within government agencies, intergroup competition seems particularly unlikely to explain our results.

desire to improve or protect the organization. This is commonly referred to as a prosocial motive (Brief and Motowidlo, 1986). Such behavior is sometimes conceptualized as “principled organizational dissent,” by which individuals report wrongdoing in an attempt to change the organization’s practices or policies (Penner, Dovidio, Piliavin, & Schroeder, 2005) and improve its long-term well-being (Brief and Motowidlo, 1986). Our perspective is that high group cohesion promotes prosocial whistleblowing when wrongdoing is witnessed outside the group.

Finally, we expect the likelihood of reporting wrongdoing observed outside the group to be low when group cohesion is low. Without the organizational identification that emerges from cohesive groups and without the support of such a group to shield and protect the whistleblower, there is little motivation for an employee to come forward. Reporting wrongdoing requires an expenditure of time and effort which is compounded by the risk of retaliation (Rehg et al., 2008). Without some extra impetus to report the wrongdoing (such as interpersonal competition or prosocial motives), there is little reason to assume the potential costs. Moreover, it is easier to ignore misconduct perpetrated by nongroup members, as the witness and perpetrator are less likely to regularly interact (Feld, 1981; McPherson and Smith-Lovin, 2002). For these reasons, many observers of misconduct might decide not to get involved at all.

Figure 1 displays our proposed outcomes for the interaction of group cohesion and the location of the wrongdoing on whistleblowing decisions within organizations. High workgroup cohesion decreases the likelihood of reporting wrongdoing within the group but increases the likelihood of reporting wrongdoing outside the group. Low workgroup cohesion increases the likelihood of reporting wrongdoing within the group but decreases the likelihood of reporting wrongdoing outside the group. Together, this is consistent with Hildreth, Gino, and Bazerman's (2016) finding that loyalty can lead to corruption when it requires protecting members of the

group, but can promote good citizenship behavior—including a willingness to voice concerns—when no one in the group is threatened.

[Figure 1 here]

## METHODS

The challenge of systematically studying whistleblowing in field settings is that both witnessing and reporting wrongdoing tend to be rare and can be confounded with other factors. Alternatively, it is difficult to conceive of simulated experimental settings, in which subjects are aware that the situation is artificial, that would accurately capture interpersonal relations and the potential for retaliation. The same is true for vignette studies, where survey respondents imagine a particular scenario and indicate whether or not they would report. Although no individual method is ideal, in concert they can somewhat offset each other's limitations.

To evaluate our hypotheses, we use the 2010 Merit Principles Survey (MPS), distributed to tens of thousands of government employees, which asks about both observed and hypothetical wrongdoing. The MPS includes a sufficient subsample of employees who did observe wrongdoing to conduct statistical analyses. We can therefore test our theory against real incidents. The survey also asks about hypothetical wrongdoing, which allows us to evaluate our theoretical arguments for the full sample of respondents, reducing concerns of sample selection bias, reverse causality, and omitted variables. Importantly, these hypothetical scenarios are concretely situated within the employee's current work environment. Together, these two different sources of data provide a more thorough and robust test of our theory than either would alone.

The MPS is a voluntary and anonymous survey administered periodically by the US Merit Systems Protection Board (MSPB) to promote an effective federal workforce free of prohibited personnel practices. Federal employees are required by law to report misconduct, as

stated by the US Government Ethics Standards: “Employees shall disclose waste, fraud, abuse, and corruption to appropriate authorities” (Executive Order Number 11222, 1965). In particular, we use the 2010 edition of MPS because that is the latest version to include a module on whistleblowing attitudes and behavior. The survey was distributed—primarily via email—between July and September 2010.<sup>2</sup>

Using stratified random sampling, the survey was distributed to 71,970 full-time federal employees across 24 departments and agencies (see Appendix A for the complete list). As of September 2009, those departments and agencies accounted for approximately 98 percent of the permanent, full-time federal workforce. Employees sampled were drawn from the Office of Personnel Management federal workforce records. The sampling plan required that some groups be oversampled to ensure statistically reliable results. Of the 43,162 returned surveys, 42,020 were deemed complete and valid, yielding an overall response rate of 58 percent.<sup>3</sup> Post-stratification weights based on the population of employees government-wide were calculated by the MSPB to ensure the representativeness of the responses and are applied to all reported analyses (US Merit Systems Protection Board, 2012).

## SAMPLES

We first test our arguments on the subsample of respondents who witnessed wrongdoing within their department or agency. Subsequently, we use the full sample—specifically, their responses concerning hypothetical misconduct—to evaluate our theory. As the survey asked

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<sup>2</sup> At the request of the Department of Transportation, 1,300 Federal Aviation Administration respondents were provided paper surveys as they could not receive online surveys. The full survey is accessible at <https://www.mspb.gov/studies/surveys.htm>.

<sup>3</sup> The targeted sample is three percent of the federal government’s workforce and surveys were excluded if respondents failed to answer 25 core survey questions.

similar questions concerning both the behavioral and hypothetical reporting, we can conduct similar analyses for each sample.

### *Behavioral Whistleblowing*

To evaluate behavioral whistleblowing, we examined respondents who answered yes to the following question: “During the last 12 months, did you personally observe or obtain direct evidence of one or more illegal or wasteful activities involving your agency?”<sup>4</sup> Nine percent of the respondents in the sample said yes.

Given that we are concerned with whistleblowing within organizations, we excluded 258 observations (7 percent of those who witnessed wrongdoing) in which the respondent reported that the wrongdoing took place outside his or her department or agency. All results remain the same if we take a more expansive view of organizational wrongdoing and include all wrongdoing within the federal government, as some employees may broadly construe the entire Executive Branch (within which the agencies and departments are situated) as the same organization.

Respondents who had observed wrongdoing were asked a series of yes-or-no questions regarding whom they told. In alignment with standard definitions of internal whistleblowing, we consider someone to have blown the whistle only if he or she reported the information to someone within the organization with the authority to take action (Near and Miceli, 1985). Hence, we consider individuals to have *not* reported if they only told family or friends as they were not authorities at the organization. Following Dungan, Young, and Waytz (2019), we also

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<sup>4</sup> Although wasteful activities might not seem to rise to the same level of wrongdoing as illegal behavior, in this context waste is viewed as a serious transgression. The Office of Government Ethics treats waste as an ethical violation in its Standards of Conduct that apply to all US government employees (Executive Order Number 11222, 1965).

drop 522 observations (15 percent) involving witnesses who only told co-workers or “other” about the wrongdoing, as we cannot determine whether those informed individuals had authority to act on the information.

In this particular context, internal whistleblowing includes reporting to immediate supervisors, higher-level supervisors, agency officials, or the Agency Inspector General. Using this definition of whistleblowing omits people who reported wrongdoing to someone with authority but who could not be considered internal to the organization, such as the Office of Special Counsel and the Government Accountability Office (which are internal to the Executive Branch, where the agencies and departments reside, but are not part of any particular agency), law enforcement, the news media, a union representative, a Congressional staff member, or an advocacy group outside the government. Almost all reporting, however, occurs within the department or agency. Only 14 individuals reported only to the Office of the Special Counsel or the Government Accountability Office, while 73 reported only to external authorities outside the government. Together, this means that 98 percent of reporting individuals notified internal authorities, which is consistent with previous findings that the vast majority of whistleblowing is internal (Miceli & Near, 1992). Although we follow the restrictive definition of whistleblowing in our analysis and drop those who report to external authorities, our results are not sensitive to whether we include all individuals who report to anyone with the authority to take action.<sup>5</sup>

Finally, in order to clearly distinguish between wrongdoing observed inside the workgroup from wrongdoing observed outside the workgroup, we drop 239 respondents (6

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<sup>5</sup> An additional 76 respondents reported to at least one internal social control agent and at least one external social control agent. As research has established that those who report to multiple channels almost always report internally first (Miceli & Near, 1992), we include them as internal whistleblowers.



percent) who indicated that they observed wrongdoing that occurred both inside and outside the workgroup. It is unclear from the survey whether this meant that the wrongdoing had been perpetrated by multiple people or that the respondent had observed several independent acts of misconduct. After making these adjustments, our sample contains 82 percent of all individuals who observed wrongdoing. A further 60 (2 percent) are dropped due to missing data, yielding a final sample of 2,624 federal employees who witnessed wrongdoing either inside or outside the workgroup (but within the organization) and whom we can clearly distinguish as having reported to internal authorities or as not having reported at all.

### *Hypothetical Whistleblowing*

Prior to the questions on observed wrongdoing, respondents were asked about imagined or hypothetical wrongdoing. For the analysis of hypothetical whistleblowing, we include all survey respondents who answered the questions about whether or not they *would* blow the whistle against various types of perpetrator should the occasion arise. Specifically, the survey asks six questions that start with the phrase, “How likely would you be to blow the whistle when the wrongdoer is [one item from a list of types].” Of particular interest are two options: “A coworker (in your workgroup)” and “A Federal employee outside your workgroup.” These questions clearly distinguish between wrongdoing inside and outside the group, allowing us to evaluate our theory for hypothetical scenarios.

To evaluate employees’ willingness to report a hypothetical wrongdoing, we examine deviations from each individual’s baseline propensity to report (see details below). To do so, we examine all six hypothetical questions about willingness to report different types of individual. Eighty percent of the respondents answered the hypothetical whistleblowing questions, giving us a sample size of 33,755 respondents.

## VARIABLES

### *Dependent Variables*

*Behavioral whistleblowing.* For behavioral whistleblowing analysis, our dependent variable is a binary indicator of whether or not an employee who observed a wrongdoing blew the whistle internally. It equals 1 if the employee reported the wrongdoing to any of the aforementioned authorities (immediate supervisors, higher-level supervisors, agency officials, and the Agency Inspector General) and 0 otherwise.

*Hypothetical whistleblowing.* Respondents were asked six questions about their willingness to report different types of wrongdoer: an employee within the workgroup, an employee outside the workgroup, a supervisor, a higher-level supervisor, a contractor or vendor, and a political appointee. Although the first two questions are of particular interest, the availability of all six lets us construct a baseline propensity for each individual to report wrongdoing in general.

All six questions were answered on a five-point scale ranging from “very unlikely” to “very likely.” From these questions, we construct two dependent variables. The first—the likelihood of reporting someone within the workgroup—is created by calculating the response to the hypothetical question about reporting inside the workgroup in relation to all six responses about reporting. As with a z-score, this involved subtracting the mean and dividing by the standard deviation of the six responses for each individual. The resultant variable indicates the willingness to report someone inside the workgroup above and beyond a person’s overall propensity to report. The second dependent variable—the likelihood of reporting someone outside the workgroup—is computed with the same technique.<sup>6</sup>

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<sup>6</sup> For those who did not vary in their responses to any of the six hypothetical questions, the standard deviation of their responses is zero. Due to this lack of variation, we code these values as zero.

### *Independent Variables*

*Wrongdoing Location (Inside Workgroup).* Given our theory, we are interested in where the wrongdoing occurred: whether the perpetrator was within the observer's workgroup or outside the workgroup but inside the organization. This is a dichotomous variable set to 1 when the wrongdoing was committed by a member of the witness's workgroup and 0 when it was committed by an employee outside the workgroup but within the organization. In the behavioral sample the location was observed by the potential whistleblower but in the hypothetical sample employees are asked to imagine the wrongdoing being committed by both workgroup members and nongroup members.

*Workgroup Cohesion.* To measure group cohesion, we rely on a survey item that captures both the behavioral and attitudinal dimensions of how well the work unit functions collectively. The survey item states: "A spirit of cooperation and teamwork exists in my work unit." The MPS uses the terms "work unit" and "workgroup" interchangeably and defines a work unit as "the immediate group of employees headed by your direct supervisor." This survey item corresponds with Seashore's (1954) definition of group cohesion as "team spirit" and "teamwork." Respondents rated their agreement on a five-point scale ranging from "strongly disagree" to "strongly agree"; we center these responses at zero. Note that this question measures individual perceptions of workgroup cohesion and is not a group-level indicator. This is beneficial; what should matter for reporting is how the potential whistleblower *perceives* group dynamics, regardless of whether other group members would agree.<sup>7</sup>

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<sup>7</sup> Employees' workgroups were not identified in the survey data, precluding an assessment of the extent to which members agree on the cohesion of their workgroups.

### *Control Variables*

*Race and ethnicity.* To control for race and ethnicity, we use indicators for respondents being Black, Asian, and Native American (with White as the reference category), as well as an indicator for Hispanic.

*Education.* We include indicators for Some College, Bachelor's Degree, and Advanced Degree (with No College as the reference category). Isolated studies have found higher education to predict whistleblowing (Near and Miceli, 1996), though education does not appear to play a significant role in meta-analysis (Mesmer-Magnus and Viswesvaran, 2005).

*Job Tenure.* This variable records the length of time the respondent has worked as a federal civil service employee. The survey offered 11 options: under 1 year, 1–3 years, 4–7 years, 8–11 years, 12–15 years, 16–19 years, 20–23 years, 24–27 years, 28–31 years, 32–35 years, and more than 35 years. In previous work, longer tenure tends to be associated with a greater likelihood of whistleblowing (Mesmer-Magnus and Viswesvaran, 2005).

*Pay Scale.* The way in which the respondent is paid provides insight into how his or her employment is categorized. Respondents indicated whether their pay system is “General Schedule,” “Wage Grade,” “Executive (Senior Executive Service),” or “Other.” As only 0.4 percent of the respondents indicated “Executive,” we combine “Other” and “Executive” and use this combined category as the reference.

*Supervisor.* This variable indicates whether or not a respondent has formal supervisory responsibilities. We include it because those with higher positions or supervisory roles tend to be more likely to blow the whistle (Near and Miceli, 1996).

*Sub-agency fixed effects.* It is plausible that the employees in different agencies have different propensities to report wrongdoing and that these tendencies are correlated with our independent variables. We therefore include fixed effects at the sub-agency level. Some of the 24 departments

and agencies have subcategorizations (for example, the Department of Commerce includes the Patent and Trademark Office and the Bureau of the Census). Using the 61 sub-agency categories for our fixed effects allows us to better control for each respondent's environment.

It is important to note that the survey did not ask respondents to report their gender, so unfortunately, we are not able to account for it in the models. Nevertheless, studies of the role of gender in whistleblowing offer mixed results (Near and Miceli, 1996).

## RESULTS FOR BEHAVIORAL WHISTLEBLOWING

Table 1 displays the descriptive statistics for both the behavioral (Panel A) and hypothetical (Panel B) whistleblowing samples. In both samples, the typical respondent was white, college educated, and salaried and had been a federal civil service employee for approximately 15 years. About a third of the respondents were supervisors.

[Table 1 here]

Forty-seven percent of the observed wrongdoing took place inside the workgroup, while 53 percent took place outside the workgroup but within the organization. Of those who witnessed wrongdoing, 55 percent reported it. This is in line with past findings that about half of those who observe misconduct report it (Miceli, Rehg, Near, Ryan, 1999; Miethe, 1999).

To analyze the effect of social distance and group cohesion on whistleblowing, we use logistic regression, in which the outcome takes a value of 1 if the witness reported the wrongdoing. Due to established issues with interpreting interaction effects in nonlinear models with categorical dependent variables (Ai and Norton, 2003), we present the same analyses using linear probability models (see Appendix B). For all models, we include sub-agency fixed effects. Standard errors are clustered at the sub-agency level.

Table 2 presents the behavioral whistleblowing analysis using the sample of employees who witnessed wrongdoing within their department or agency. Model 1 includes only our key

independent variables—*wrongdoing location* and *workgroup cohesion*—and the interaction between them. In this specification, *workgroup cohesion* is positive and statistically significant ( $\beta = 0.198, p = 0.004$ ), while the interaction between *wrongdoing location* and *workgroup cohesion* is negative and statistically significant ( $\beta = -0.335, p < 0.001$ ). This suggests that *workgroup cohesion* has opposite effects on *behavioral whistleblowing* depending on whether the wrongdoing is observed inside or outside the workgroup. Model 2 adds employee demographic variables, while Model 3 adds job characteristics. Across these three models, *workgroup cohesion* and the interaction term both remain largely unchanged in magnitude and statistical significance.

[Table 2 here]

Figure 2 graphically shows the results from Model 3 of Table 2 and the predicted probabilities of *behavioral whistleblowing* for the various levels of *workgroup cohesion* for a white employee with a bachelor's degree who is not a supervisor and mean value for all other model variables. As our theory predicts, as *workgroup cohesion* shifts from its lowest to its highest value, the probability of reporting wrongdoing within the workgroup decreases from 55 percent to 42 percent while the probability of reporting wrongdoing outside the workgroup increases from 34 percent to 52 percent. Differences in *behavioral whistleblowing* inside versus outside the group are significant at all values of *workgroup cohesion* except near where the two lines cross. It is important to note that although the confidence intervals of the two lines for wrongdoing locations overlap when *workgroup cohesion* was reported to be “very high”, the values are significantly different from each other ( $p = 0.009$ ). Figure 2 also displays the number of observations at each value, represented by the size of the circles, and demonstrates that our results are not driven by low sample sizes for certain combinations of the interaction term. These results support our theory: the likelihood of reporting wrongdoing inside the workgroup

decreases with workgroup cohesion, while the likelihood of reporting wrongdoing outside the workgroup increases with workgroup cohesion.

[Figure 2 here]

## ADDITIONAL ANALYSES

### *Wrongdoing Characteristics*

It is possible that our results are driven by individuals observing different types of wrongdoing inside versus outside the group or different types of wrongdoing at different levels of group cohesion. To account for these potential confounds, we control for characteristics of the wrongdoing by including three additional variables in Model 4 of Table 2: the damage incurred, its frequency, the type of wrongdoing. The type of wrongdoing is indicated by a survey question asking respondents to categorize the wrongdoing among 10 options.<sup>8</sup> To account for this variety, we include dummy variables for each option.

Regarding the damage of the observed wrongdoing, the survey asks, “If a dollar value can be placed on this activity, what was the amount involved?” Responses include: less than \$100, \$100 to \$999, \$1,000 to \$4,999, \$5,000 to \$100,000, and more than \$100,000. In our sample, 39 percent of respondents did not know the cost of the observed wrongdoing, which we capture with an additional indicator. For those who estimated the damage, the median answer was that it cost the organization between \$5,000 and \$100,000.

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<sup>8</sup> The full list of 10 options is: “Stealing Federal funds,” “Stealing Federal property,” “Accepting bribes or kickbacks,” “Waste caused by ineligible people receiving funds, goods, or services,” “Waste caused by unnecessary or deficient goods or services,” “Use of an official position for personal benefit,” “Waste caused by a badly managed program,” “Unfair advantage in the selection of a contractor, consultant, or vendor,” “Tolerating a situation or practice which poses a substantial and specific danger to public health or safety,” and “Other serious violation of law or regulation.”

For frequency of the observed wrongdoing, respondents were given the options “once or rarely,” “occasionally,” and “frequently.” The frequency most often reported was “occasionally.” We also include a variable coded 1 when a respondent was uncertain about the frequency.

We include these additional variables in Model 4 of Table 2. Not surprisingly, greater *wrongdoing damage* and higher *wrongdoing frequency* increase the likelihood of whistleblowing, following previous results (Miceli, Near, & Dworkin, 2008; Near & Miceli, 1996). Nevertheless, *workgroup cohesion* and the interaction term remain largely unchanged. Thus, even when accounting for characteristics of the wrongdoing, our results remain consistent.

#### *Workgroup Response to Whistleblowing*

Because the observed wrongdoing and the decision to report it took place prior to the survey (that is, retrospectively), while the question about workgroup cohesion referred to when the survey was taken (that is, contemporaneously), it is possible that reverse causality might affect the results. In other words, it is plausible that employees who reported someone within their workgroup were subsequently more likely to experience a reduction in workgroup cohesion. If this is the case, reporting may lead to lower workgroup cohesion, rather than—as we have proposed—vice versa.

We therefore examined the survey’s six questions about the reactions of whistleblowers’ colleagues after the reporting occurred; namely, how true was it that “My coworkers were unhappy with me for having reported the problem,” “My supervisor was unhappy with me for having reported the problem,” “I was given credit by my management for having reported the problem,” “Someone above my supervisor was unhappy with me for having reported the problem,” “I was threatened with reprisal for having reported the problem,” and “I received an actual reprisal for having reported the problem.” Affirmative answers to any of these six could



have impacted workgroup cohesion *after* the respondent blew the whistle. We therefore reevaluate the likelihood of *behavioral whistleblowing* by omitting observations in which the respondent answered affirmatively to at least one of these questions. We omit these observations because reprisals were conditional upon whistleblowing, and therefore positive responses to reprisals are perfectly correlated with *behavioral whistleblowing*, our dependent variable. In other words, employees could only experience a reprisal to whistleblowing if they had blown the whistle. While Model 5 presents the sample without cases in which whistleblowers experienced reprisals, our results also remain consistent in alternative models where we include reprisal as a variable. Model 5 shows our results, which remain consistent with previous models. While this cannot completely address issues of reverse causality, it does help allay concerns that social reprisal may be driving the reported effects.

#### *Whistleblower Anonymity*

Model 6 investigates the effects of anonymity on whistleblowing. Survey respondents were asked: “If you DID report this activity, were you identified as the source of the report?” Those who answered “no” should not have found their relationships with other workgroup members affected by their (anonymous) actions. Similar to the analysis of reprisals, the outcome for whistleblower anonymity is an antecedent of our dependent variable, *behavioral whistleblowing*, and not appropriate to include in the model. Thus, Model 6 restricts the sample to those who remained anonymous and, again, the results remain substantively unchanged. In models not reported here which include it as variable the result are also consistent. This also helps to allay concerns that social reprisal is driving the reported effects.

## RESULTS FOR HYPOTHETICAL WHISTLEBLOWING

Although whistleblowing intentions and whistleblowing behavior do not always align (Mesmer-Magnus and Viswesvaran, 2005), examining the survey responses concerning hypothetical whistleblowing provides several benefits. First, the hypothetical questions do not suffer from the possibility of reverse causality or omitted variable issues that were present for the behavioral sample. Second, because the questions about hypothetical wrongdoing were asked of all respondents, there is a much larger sample and the results are not confounded with the likelihood of observing wrongdoing. Finally, because employees were asked about their willingness to report wrongdoing both inside and outside their workgroups, there is less of a concern about selection biases in employees' responses. Accordingly, this analysis can be viewed as a variant of a within-subject experiment from the population of interest without confounds regarding either the likelihood of observing the wrongdoing or the potential of employees sorting into particular types of workgroups.

[Table 3 here]

Table 3 displays the results of the analysis using OLS regression. The first two models show the two dependent variables, using all control variables along with sub-agency fixed effects. Standard errors are clustered at the sub-agency level. Model 1 evaluates *hypothetical whistleblowing* on wrongdoing committed by a member inside the workgroup. The coefficient on *workgroup cohesion* is negative ( $\beta = -0.017, p < .001$ ), indicating that respondents are less willing to report fellow workgroup members as *workgroup cohesion* increases. Model 2 shows the opposite effect for *hypothetical whistleblowing* when the wrongdoing is observed outside the workgroup. The greater the *workgroup cohesion*, the more willing respondents are to report wrongdoing outside ( $\beta = 0.016, p = .007$ ). Together, the two models show divergent effects on *hypothetical whistleblowing*, as predicted by our theory.

The last two models include a control variable for whether or not a respondent had witnessed wrongdoing previously, which could influence answers to the hypothetical questions. However, after controlling for *witnessed wrongdoing*, the results hold: across both *behavioral* and *hypothetical whistleblowing*, as cohesion increases, witnesses are less likely to report wrongdoing within the workgroup and more likely to report wrongdoing outside it. Taken together, the results for *hypothetical whistleblowing* are consistent with our results for *behavioral whistleblowing*.

#### EXPLORATORY ANALYSIS: FACTORS IN THE DECISION TO BLOW THE WHISTLE

Thus far, we have provided evidence for an effect of *workgroup cohesion* by contrasting patterns of reporting based on whether the wrongdoing is observed inside or outside the workgroup. We argue that the decision to report wrongdoing inside the group versus outside the group hinges on divergent underlying factors. To explore the potential mechanisms for differing whistleblowing decisions, we analyze 21 items in the MPS concerning the extent to which certain factors played a role (or would play a role) in the respondent's decisions (real or hypothetical) to report.

These factors include characteristics of the wrongdoing (for example, is it serious enough to report), possible negative effects of whistleblowing on work relationships, concerns about retaliation, and concerns about whether reporting would stop the misconduct. Respondents rated each factor on a scale of 1 (not at all) to 4 (great extent) (see Appendix C for the complete list of survey items). A high value for one or more of these scores provides insight into the concerns that were salient during the process of deciding whether or not to report. In the case of observed wrongdoing, the respondents answered questions about the single incidence of wrongdoing they had observed either inside or outside the group. In the hypothetical sample, respondents separately reported their likelihood of reporting wrongdoing inside and outside their workgroup.

Both samples were asked to answer the 21 questions regarding factors in their decision to report. In other words, those in the behavioral sample answered the 21 questions twice—once for the observed wrongdoing and again for the hypothetical wrongdoing.

We use partial least squares structural equation models (PLS-SEM) to examine the 21 factors for emergent constructs and their relationships to *workgroup cohesion*, *wrongdoing location*, and the respondent's willingness to report. PLS-SEM provides an alternative to covariance-based SEM and can estimate theoretically established constructs and cause-effect models. PLS-SEM is ideally suited for theory building and is particularly appealing when the research objective focuses on the variance of outcomes and on prediction by different explanatory constructs (Hair et al., 2012).

Exploratory factor analysis of the 21 items for both the behavioral and hypothetical samples revealed four factors associated with observing wrongdoing: concerns regarding retaliation, costs to relationships with colleagues, concerns about the wrongdoing warranting reporting, and beliefs concerning whether or not the wrongdoing could be stopped. Confirmatory factor analysis (CFA) demonstrated that only *retaliation* and *cost to relationships* with colleagues remained unidimensionally consistent for both the behavioral and hypothetical samples. Given the stability of those two concerns and our theoretical focus on group dynamics, we retained only those two constructs in the models reported below.

*Retaliation* concerns included items such as “Concern that it might affect my performance appraisal,” “Concern that it might affect my ability to get training,” and “Concern that management might become less tolerant of any small mistakes I might make.” The two questions regarding *costs to relationships* were “Concern that I would be seen as disloyal” and “Concern that it might negatively impact my relationship with my co-workers.” Cronbach's

alpha was acceptably high for both samples (for Retaliation,  $\alpha = .93$  and  $.95$  for the behavioral and hypothetical samples, respectively, and for Relationships,  $\alpha = .77$  and  $.86$  for the behavioral and hypothetical samples, respectively), suggesting acceptable inter-item reliability. Dillon-Goldstein's rho, considered a better indicator than Cronbach's alpha because it takes into account the extent to which the latent variable explains its block of indicators, is also larger than 0.7 for both samples (for Retaliation,  $\rho = .94$  and  $.96$  for the behavioral and hypothetical samples, respectively, and for Relationships,  $\rho = .94$  and  $.93$  for the behavioral and hypothetical samples, respectively). Additionally, the retaliation and relationship items loaded on the single factor as expected (above  $.78$ ) and did not load on other factors.

While our focus is on the behavioral sample, we also tested our model on the hypothetical sample. We used bootstrapping resampling of 5,000 samples in all our model specifications. For the behavioral sample, we use PLS-SEM with multi-group analysis to test the differences between reporting wrongdoing when it occurred inside versus outside the workgroup. For the hypothetical sample, both outcomes (inside and outside the work group) are incorporated into the model. Table 4 and Figure 3 show the PLS-SEM results for the behavioral sample separated by the location of the observed wrongdoing. The path coefficients from the structural models indicate that for wrongdoing committed both inside and outside the group, increases in *workgroup cohesion* corresponded with reduced concerns for both *cost to relationships* and *retaliation for behavioral whistleblowing*.

Notably, the path coefficient for *workgroup cohesion* on *cost to relationships* was lower and statistically significant ( $\beta = -0.140$ ,  $p < .000$ ) when wrongdoing was observed outside rather than inside the group ( $t = 1.874$ ,  $p = 0.031$ ). That is, when the *location of the wrongdoing* is outside the workgroup, employees with high *workgroup cohesion* are significantly

less likely to be concerned that whistleblowing will be costly to their relationships than employees with high *workgroup cohesion* who witness wrongdoing inside their group. Surprisingly, only *cost to relationships* ( $\beta = -0.123, p < .000$ ) and not *retaliation* ( $\beta = -0.024, p = 0.024$ ) had a significant negative relationship on *behavioral whistleblowing*, suggesting that *cost to relationships* was a more important factor than *retaliation* for employees when deciding to blow the whistle.

The results in Table 4 also indicate a significant indirect effect of *workgroup cohesion* through *cost to relationships* on *behavioral whistleblowing* ( $\beta = 0.016, CI = [0.007 - 0.029]$ ). Thus, *cost to relationships* mediates the effects of *workgroup cohesion* on *behavioral whistleblowing*. These results suggest that concerns about relationship costs rather than concerns about retaliation underlie the effects of belonging to a cohesive workgroup on deciding to blow the whistle and that when wrongdoing occurs outside the group, concerns about relationship costs are less salient to that decision.

[Table 4 and Figure 3 here]

The pattern for the behavioral sample also corresponds with the results for the hypothetical sample presented in Table 5, in which both the direct effects of *cost to relationships* on *hypothetical whistleblowing* (inside or outside the workgroup) and from *workgroup cohesion* to *hypothetical whistleblowing* are greater than the *retaliation* path coefficients. Moreover, the indirect path from *workgroup cohesion* through *cost to relationships* is also greater for *Report (Inside)*. The replication of results between the two samples bolsters our confidence in our findings that concerns about relationship are a primary factor when deciding to report wrongdoing, particularly when that wrongdoing is observed inside the group rather than outside it.

[Table 5]

## DISCUSSION AND CONCLUSION

We presented a theory explaining the effect of varying social contexts on whistleblowing decisions. When wrongdoing is observed inside the group, higher group cohesion is associated with a decreased likelihood of reporting. When wrongdoing is observed outside the group, higher group cohesion is associated with an increased likelihood of reporting. We found support for this theory through an analysis of both actual whistleblowing and hypothetical intentions. This work demonstrates the critical role of group cohesion and social distance in whistleblowing. In addition, we find that employees' concerns regarding costs to their relationships may explain the differences in willingness to report we demonstrate.

Our results demonstrate that group cohesion—commonly touted as uniformly positive for organizational success—has mixed results in the domain of whistleblowing. Although cohesion may increase willingness to report individuals outside the group, it simultaneously increases willingness to shield fellow group members' misconduct. In this way, some of the cooperation and coordination benefits that come with cohesion may be diverted into organization-harming behavior. This reveals a trade-off when it comes to monitoring and preventing wrongdoing in organizations and helps to explain why such wrongdoing is so difficult to eradicate.<sup>9</sup>

This work contributes generally to research on organizational misconduct and specifically to the whistleblowing literature. Over the past several decades, a variety of researchers have either acknowledged the absence of social factors in whistleblowing research or called for them to be incorporated as a future area of study (Mesmer-Magnus & Viswesvaran, 2005; Miceli et

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<sup>9</sup> This is particularly the case considering that we observe approximately the same percentage of violations inside the workgroup as outside. If wrongdoing were instead observed primarily in one location, then increasing the likelihood of reporting in that location would increase overall reporting.

al., 2008). By incorporating features of the social environment, we help to integrate competing explanations of whistleblowing—loyalty, disgruntlement, and prosocial behavior—by demonstrating that they are associated with particular social conditions.

Although we corroborate our results using both behavioral and hypothetical samples, our analyses have some limitations. For one, while our sample is large, it consists only of government employees. While the reporting of wrongdoing is fundamental to all types of organization, the extent to which our findings extend beyond civil servants is not clear. Setting aside concerns of generalizability, the importance of understanding federal organizations is clear given their important role for both the US economy and society more broadly. Moreover, our theoretical arguments are not contingent on special features of government agencies or the characteristics of federal employees. Hence, subsequent research on the likelihood of whistleblowing might examine the role of workgroups and wrongdoer proximity in non-government settings.

While the self-reported measure of workgroup cohesion allows us to measure individual perceptions, our results might have been strengthened with a more objective measure of workgroup cohesion. Additionally, although we observe whether a perpetrator is inside or outside the observer's workgroup, this measure of social distance assumes that group boundaries are particularly salient. Future studies might incorporate other measures of social distance to determine if social proximity measured as a continuous variable provides additional insight.

Finally, this research design did not permit us to pinpoint the mechanisms by which individuals decide whether to report wrongdoing. Although the PLS-SEM analysis provides some insight by delving into the decision-making process, additional research could better



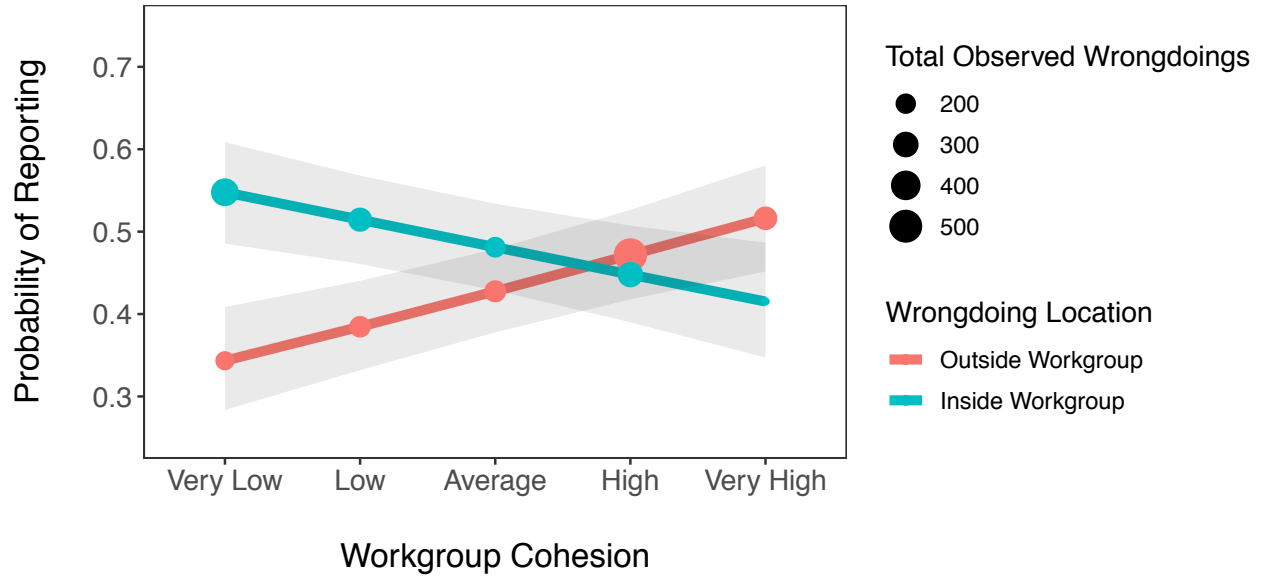
specify what it is about being in a group that leads to the observed patterns. This would provide more information about the microdynamics from which our results emerge.

Studying whistleblowing is inherently difficult, but the data source we examine here constitutes one of the largest and most comprehensive surveys on whistleblowing to date. It is also, to our knowledge, the only survey that allows for investigation of the social embeddedness of whistleblowing. Our study is, however, an early step in advancing a relational theory of whistleblowing. There are a variety of ways in which social factors may influence whistleblowing and identifying additional factors is an important future direction for research.

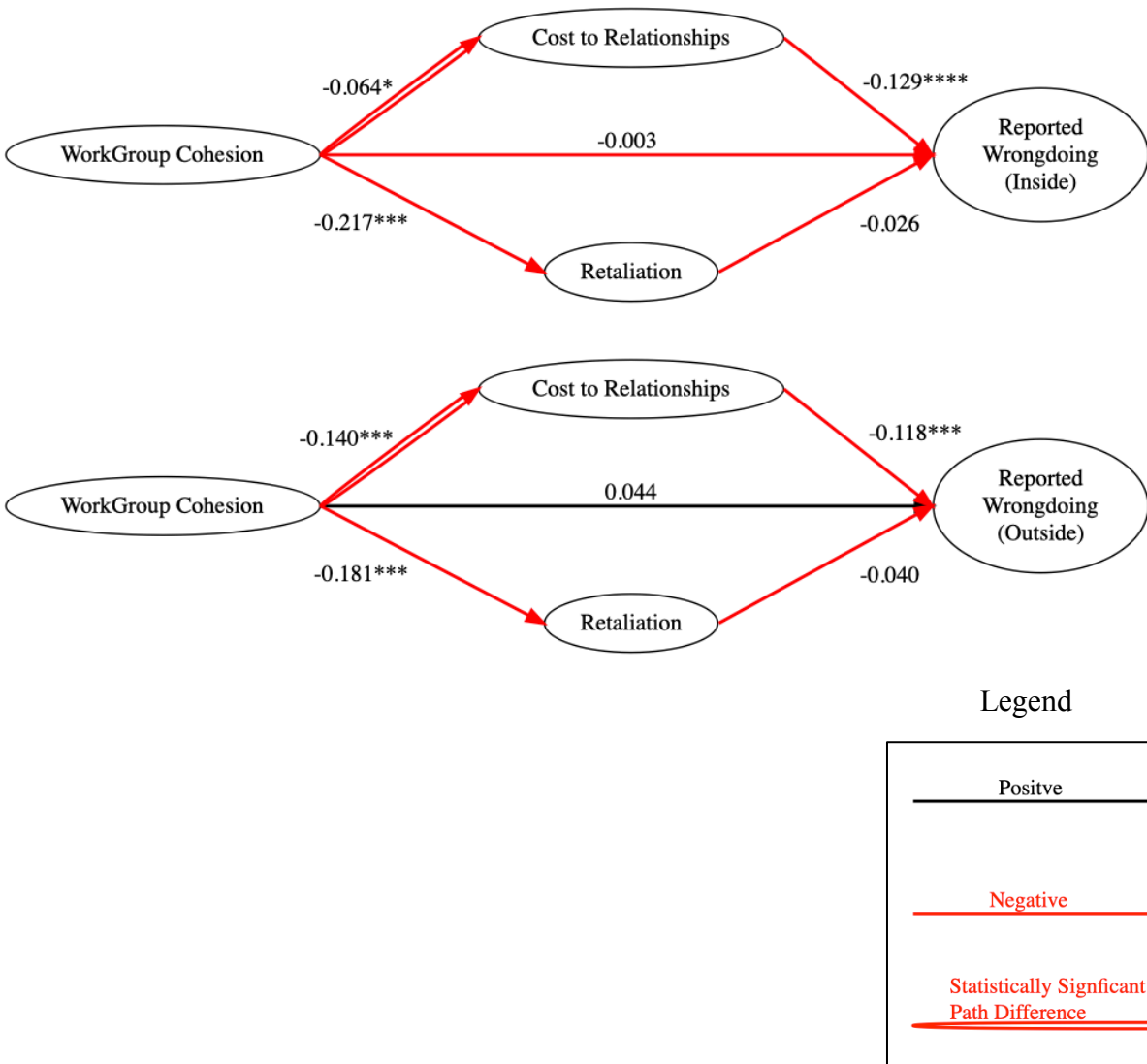
FIGURES

		<b>Wrongdoing Observed</b>	
		<b>Inside Workgroup (In Organization)</b>	<b>Outside Workgroup (In Organization)</b>
<b>Workgroup Cohesion</b>	High	Do not report (Loyalty)	Report (Prosocial)
	Low	Report (Dysfunction)	Do not report (Apathy)

**Figure 1.** Workgroup Cohesion and Location of Wrongdoing Predictions on Whistleblowing.



**Figure 2.** *Workgroup Cohesion* and Wrongdoing Location as Predictors of Reporting. Based on estimates from Table 2, Model 3 for White employee with a bachelor’s degree who is not a supervisor and set to the mean for all other values. Points are sized to the number of observations. Note, the probabilities of reporting inside versus outside the workgroup are significantly different for all values of *Workgroup Cohesion* except where cohesion is “High.”



**Figure 3.** Partial Least Squares Path Model for Behavioral Sample of Respondents by Wrongdoing Observed Inside versus Outside the Respondent's Workgroup. Black lines denote a positive path coefficient and red lines depict a negative path coefficient between constructs and outcomes. Double lines represent statistically significantly differences between the representative paths. In particular, the paths from *Workgroup Cohesion* to *Cost to Relationships* are significantly different between *Reported Wrongdoing (Inside)* and *Reported Wrongdoing (Outside)*.

TABLES

Table 1. Summary Statistics for Behavioral and Hypothetical Samples

Panel A: Descriptive Statistics for Behavioral Sample ( $N = 2,624$ )

Statistic	Mean	St. Dev.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Reported Wrongdoing	0.536	0.499													
(2) Workgroup Location (Inside)	0.467	0.499	0.074												
(3) Workgroup Cohesion	-0.006	1.363	0.031	-0.255											
(4) Hispanic	0.074	0.262	0.001	0.043	-0.021										
(5) Native American	0.071	0.256	0.015	-0.013	-0.005	0.03									
(6) Asian	0.043	0.202	0.004	-0.009	0.015	-0.017	0.03								
(7) Black	0.136	0.343	-0.031	0.044	-0.059	-0.061	-0.009	-0.023							
(8) Some College	0.292	0.455	0.03	0.106	-0.112	0.071	0.115	-0.036	0.03						
(9) Bachelor's Degree	0.343	0.475	-0.02	-0.039	0.052	-0.042	-0.061	-0.022	-0.005	-0.464					
(10) Advanced Degree	0.323	0.468	0.005	-0.057	0.074	-0.028	-0.044	0.068	-0.021	-0.443	-0.499				
(11) Tenure	6.109	2.638	0.02	-0.068	0.039	-0.039	0.01	-0.02	0.035	0.027	0.046	-0.097			
(12) Pay System (Wage Grade)	0.079	0.27	0.004	0.039	-0.037	-0.008	0.029	-0.034	-0.034	0.172	-0.096	-0.127	-0.097		
(13) Pay System (General Schedule)	0.788	0.408	0.012	0.006	-0.001	-0.003	-0.021	-0.001	0.044	-0.111	0.081	0.064	0.041	-0.567	
(14) Supervisor	0.349	0.477	0.097	-0.155	0.225	-0.031	0.023	0.015	-0.024	-0.107	0.016	0.106	0.183	-0.058	-0.071

Panel B: Descriptive Statistics for Hypothetical Sample (N = 33,755)

Statistic	Mean	St. Dev.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Reported Wrongdoing (Inside)	-0.088	0.562														
(2) Reported Wrongdoing (Outside)	0.098	0.558	-0.127													
(3) Workgroup Cohesion	0.736	1.12	-0.031	0.031												
(4) Hispanic	0.079	0.27	0.022	-0.007	-0.014											
(5) Native American	0.048	0.213	0.024	-0.02	-0.049	0.014										
(6) Asian	0.051	0.22	0.011	-0.013	0.004	-0.037	-0.021									
(7) Black	0.153	0.36	0.029	-0.026	-0.048	-0.077	-0.027	-0.069								
(8) Some College	0.274	0.446	0.015	-0.03	-0.07	0.054	0.094	-0.045	0.075							
(9) Bachelor's Degree	0.368	0.482	-0.011	0.014	0.025	-0.009	-0.045	0.013	-0.04	-0.469						
(10) Advanced Degree	0.295	0.456	-0.015	0.028	0.044	-0.052	-0.056	0.048	-0.047	-0.398	-0.494					
(11) Tenure	5.837	2.714	-0.016	-0.025	0.034	-0.043	0.003	-0.068	0.055	0.071	-0.002	-0.109				
(12) Pay System (Wage Grade)	0.085	0.28	0.013	-0.029	-0.021	0.025	0.044	0	-0.007	0.128	-0.073	-0.107	-0.113			
(13) Pay System (General Schedule)	0.793	0.405	0.006	0.007	-0.01	-0.001	-0.005	0.001	0.022	-0.087	0.059	0.056	0.03	-0.599		
(14) Supervisor	0.346	0.476	0.022	0.019	0.164	-0.022	-0.005	-0.033	-0.056	-0.06	0.013	0.071	0.239	-0.056	-0.071	
(15) Witnessed Wrongdoing	0.099	0.298	0.002	0.007	-0.217	-0.002	0.035	-0.015	-0.013	0.015	-0.013	0.012	0.03	-0.008	0.004	-0.012

*Table 2. Logistic Regression Estimates for Likelihood of Reporting an Observed Wrongdoing*

	(1)	(2)	(3)	(4)	(5)	(6)
Wrongdoing Location (Inside)	0.162 (0.102)	0.170 (0.108)	0.216* (0.104)	0.145 (0.112)	0.046 (0.107)	-0.015 (0.121)
Workgroup Cohesion	0.198** (0.068)	0.201** (0.062)	0.178** (0.059)	0.242*** (0.047)	0.254*** (0.050)	0.244*** (0.054)
Wrongdoing Location (Inside) * Workgroup Cohesion	-0.335*** (0.070)	-0.328*** (0.062)	-0.312*** (0.062)	-0.301*** (0.082)	-0.286** (0.091)	-0.277*** (0.076)
Hispanic		0.257 (0.249)	0.233 (0.244)	0.233 (0.196)	0.061 (0.303)	0.132 (0.366)
Native American		0.056 (0.427)	0.050 (0.403)	-0.091 (0.366)	-0.405 (0.392)	-0.908* (0.417)
Asian		-0.073 (0.317)	-0.077 (0.319)	0.121 (0.294)	0.267 (0.299)	0.167 (0.257)
Black		-0.276* (0.124)	-0.280* (0.127)	-0.319** (0.122)	-0.535** (0.172)	-0.527** (0.200)
Some College		-0.122 (0.257)	-0.198 (0.290)	0.044 (0.341)	-0.152 (0.373)	-0.321 (0.384)
Bachelor's Degree		-0.241 (0.304)	-0.387 (0.382)	-0.149 (0.410)	-0.362 (0.420)	-0.547 (0.377)
Advanced Degree		-0.017 (0.262)	-0.195 (0.317)	0.052 (0.483)	-0.207 (0.495)	-0.446 (0.486)
Tenure			-0.048** (0.018)	-0.048** (0.016)	-0.055* (0.024)	-0.058 (0.039)
Pay System (Wage Grade)			-0.027 (0.199)	0.096 (0.198)	-0.035 (0.288)	0.027 (0.251)
Pay System (General Schedule)			0.273 (0.264)	0.288 (0.292)	0.127 (0.328)	0.202 (0.320)
Supervisor			0.559*** (0.106)	0.609*** (0.112)	0.606*** (0.132)	0.604*** (0.169)

*Table Continued...*

Table 2. Logistic Regression Estimates for Likelihood of Reporting an Observed Wrongdoing (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
Wrongdoing Damage				0.207** (0.072)	0.131 (0.076)	0.108* (0.055)
Wrongdoing Damage (Unknown)				0.861 (0.443)	0.664 (0.515)	0.520 (0.412)
Wrongdoing Frequency				0.469*** (0.078)	0.387*** (0.103)	0.346* (0.157)
Wrongdoing Frequency (Unknown)				0.453** (0.164)	0.317 (0.277)	0.328 (0.452)
Intercept	0.013 (0.036)	0.165 (0.234)	0.294 (0.392)	-0.411 (0.696)	0.062 (0.762)	0.045 (0.693)
Type of Wrongdoing Controls	No	No	No	Yes	Yes	Yes
Sub-Agency Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,624	2,624	2,624	2,599	2,121	1,841
Log Likelihood	-1706.915	-1698.035	-1679.87	-1573.803	-1314.336	-1090.042

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; two-tailed tests.

Notes: Model 5 omits observations in which the respondent indicated reprisal to whistleblowing.

Model 6 omits observations in which the whistleblower did not remain anonymous.

Standard errors are clustered at the Sub-Agency.



Table 3. OLS Regression Estimates for Willingness to Report Hypothetical Wrongdoing

	Wrongdoing Location			
	(Inside) (1)	(Outside) (2)	(Inside) (3)	(Outside) (4)
Workgroup Cohesion	-0.017*** (0.003)	0.016** (0.006)	-0.018*** (0.002)	0.018** (0.006)
Hispanic	0.039 (0.022)	-0.018 (0.015)	0.039 (0.023)	-0.017 (0.015)
Native American	0.030 (0.042)	0.004 (0.029)	0.033 (0.040)	0.001 (0.029)
Asian	0.052** (0.019)	-0.055* (0.024)	0.051** (0.018)	-0.055* (0.024)
Black	0.033** (0.013)	-0.051*** (0.011)	0.032* (0.013)	-0.051*** (0.011)
Some College	-0.050* (0.024)	0.006 (0.011)	-0.049* (0.023)	0.004 (0.011)
Bachelor's Degree	-0.065*** (0.018)	0.033* (0.016)	-0.065*** (0.017)	0.032* (0.016)
Advanced Degree	-0.046 (0.026)	0.032* (0.013)	-0.045 (0.025)	0.031* (0.013)
Tenure	-0.004 (0.002)	-0.006 (0.003)	-0.004 (0.002)	-0.006 (0.003)
Pay System (Wage Grade)	0.0002 (0.048)	-0.056*** (0.016)	0.001 (0.048)	-0.056*** (0.016)
Pay System (General Schedule)	-0.001 (0.035)	-0.006 (0.015)	-0.001 (0.035)	-0.006 (0.015)
Supervisor	0.037** (0.014)	0.019 (0.015)	0.037** (0.014)	0.019 (0.015)
Witnessed Wrongdoing			-0.025 (0.026)	0.029* (0.014)
Intercept	-0.083** (0.028)	0.138*** (0.021)	-0.081** (0.029)	0.136*** (0.020)
Sub-Agency Fixed Effects	Yes	Yes	Yes	Yes
Observations	33,755	33,755	33,755	33,755
Log Likelihood	-42753.031	-41198.91	-51521.022	-42750.055

\*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$ ; two-tailed tests.  
Standard errors are clustered at the Sub-Agency.

Table 4. Partial Least Square Path Models for Reporting Wrongdoing in Behavioral Sample

Paths	Both	Outside	Inside	Absolute Difference
Workgroup Cohesion -> Cost to Relationships	-0.126*** (0.020)	-0.140*** (0.027)	-0.064* (0.029)	0.076*
Workgroup Cohesion -> Retaliation	-0.219*** (0.016)	-0.181*** (0.022)	-0.217*** (0.023)	0.036
Workgroup Cohesion-> Report	0.001 (0.020)	0.044 (0.028)	-0.003 (0.030)	0.017
Retaliation-> Report	-0.024 (0.025)	-0.040 (0.034)	-0.026 (0.036)	0.014
Workgroup Cohesion -> Cost to Relationships -> Report	0.016 [0.007 - 0.029]	0.008 [0.001 - 0.018]	0.016 [0.007 - 0.029]	
Workgroup Cohesion -> Retaliation -> Report	0.007 [-0.005 - 0.020]	0.005 [-0.01 - 0.021]	0.007 [-0.005 - 0.020]	
Observations	2,574	1,209	1,365	156

Notes: Bootstrap iterations = 5,000. Standard errors are in parentheses and confidence intervals are in brackets. *Cost to relationships* and *retaliation* covary in all models.

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; two-tailed tests.

Table 5: Partial Least Square Path Models for Reporting Wrongdoing in Hypothetical Sample

Path	Coefficient
Workgroup Cohesion -> Cost to Relationships	-0.135*** (0.005)
Workgroup Cohesion -> Retaliation	-0.179*** (0.004)
Workgroup Cohesion -> Report (Inside)	0.037*** (0.005)
Cost to Relationships -> Report (Inside)	-0.235*** (0.007)
Retaliation -> Report (Inside)	-0.055*** (0.007)
Workgroup Cohesion -> Report (Outside)	0.081*** (0.006)
Cost to Relationships -> Report (Outside)	-0.167*** (0.007)
Retaliation -> Report (Outside)	-0.030*** (0.007)
Workgroup Cohesion -> Cost to Relationships -> Report (Inside)	0.032 [0.029 - 0.035]
Workgroup Cohesion -> Retaliation -> Report (Inside)	0.010 [0.007 - 0.013]
Workgroup Cohesion -> Cost to Relationships -> Report (Outside)	0.023 [0.020 - 0.026]
Workgroup Cohesion -> Retaliation -> Report (Outside)	0.005 [0.003 - 0.008]
Observations	33,425

Notes: Bootstrap iterations = 5,000. Standard errors are in parentheses and confidence intervals are in brackets. *Cost to relationships* and *retaliation* covary in all models.

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; two-tailed tests.

APPENDIX A: List of Departments and Independent Agencies Participating in the 2010 Merit Principles Survey

<b>Departments</b>	<b>Independent agencies</b>
Department of the Air Force Department of the Army Department of the Navy Department of Defense Department of Agriculture Department of Commerce Department of Justice Department of Labor Department of Energy Department of Education Department of Health and Human Services Department of Homeland Security Department of Housing and Urban Development Department of the Interior Department of State Department of Transportation Department of the Treasury Department of Veterans Affairs	Environmental Protection Agency Federal Deposit Insurance Corporation General Services Administration National Aeronautics and Space Administration Office of Personnel Management Social Security Administration

APPENDIX B. Linear Probability Estimates for Likelihood of Reporting an Observed Wrongdoing

	(1)	(2)	(3)	(4)	(5)	(6)
Wrongdoing Location (Inside)	0.036 (0.023)	0.040 (0.026)	0.051* (0.024)	0.032 (0.025)	0.007 (0.023)	-0.007 (0.025)
Workgroup Cohesion	0.051*** (0.014)	0.048** (0.015)	0.042** (0.014)	0.054*** (0.010)	0.056*** (0.010)	0.050*** (0.010)
Wrongdoing Location (Inside) * Workgroup Cohesion	-0.087*** (0.018)	-0.078*** (0.015)	-0.073*** (0.015)	-0.067*** (0.018)	-0.062** (0.020)	-0.056*** (0.016)
Hispanic		0.059 (0.057)	0.053 (0.055)	0.048 (0.042)	0.015 (0.066)	0.033 (0.077)
Native American		0.012 (0.100)	0.011 (0.094)	-0.027 (0.079)	-0.092 (0.083)	-0.176* (0.069)
Asian		-0.018 (0.075)	-0.019 (0.075)	0.028 (0.066)	0.059 (0.068)	0.033 (0.052)
Black		-0.066* (0.029)	-0.065* (0.030)	-0.069** (0.026)	-0.109** (0.034)	-0.098* (0.039)
Some College		-0.030 (0.061)	-0.048 (0.068)	0.009 (0.076)	-0.033 (0.085)	-0.072 (0.088)
Bachelor's Degree		-0.059 (0.073)	-0.091 (0.090)	-0.033 (0.089)	-0.079 (0.095)	-0.117 (0.085)
Advanced Degree		-0.005 (0.062)	-0.046 (0.074)	0.011 (0.105)	-0.047 (0.110)	-0.098 (0.104)
Tenure			-0.011** (0.004)	-0.011** (0.004)	-0.013* (0.005)	-0.012 (0.008)
Pay System (Wage Grade)			-0.006 (0.047)	0.021 (0.043)	-0.008 (0.062)	0.002 (0.051)
Pay System (General Schedule)			0.064 (0.062)	0.062 (0.064)	0.028 (0.072)	0.042 (0.066)
Supervisor			0.130*** (0.025)	0.132*** (0.024)	0.135*** (0.028)	0.127*** (0.035)

*Table Continued...*

	(1)	(2)	(3)	(4)	(5)	(6)
Wrongdoing Damage				0.045** (0.015)	0.029 (0.016)	0.024* (0.011)
Wrongdoing Damage (Unknown)				0.186 (0.095)	0.144 (0.111)	0.112 (0.082)
Wrongdoing Frequency				0.106*** (0.017)	0.088*** (0.022)	0.073* (0.032)
Wrongdoing Frequency (Unknown)				0.103** (0.035)	0.080 (0.056)	0.077 (0.084)
Intercept	0.494*** (0.023)	0.541*** (0.056)	0.571*** (0.092)	0.393** (0.135)	0.499** (0.163)	0.504** (0.156)
Type of Wrongdoing Controls	No	No	No	Yes	Yes	Yes
Sub-Agency Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,624	2,624	2,624	2,599	2,121	1,841
Log Likelihood	-2975.1	-2926.554	-2910.722	-2800.186	-2288.611	-1930.505

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; two-tailed tests.

*Notes:* Model 5 omits observations in which respondent indicated some organizational or social response to whistleblowing. Model 6 omits observations in which the whistleblower did not remain anonymous.

Standard errors are clustered at the Sub-Agency.

## APPENDIX C: List of Survey Items Pertaining to Factors in Decision to Report Wrongdoing

- a. Concern that I would be suspended, demoted, or fired (retaliation)
- b. Concern that I had sufficient proof
- c. Concern that it might not be serious enough
- d. Concern that the event might not really be fraud, waste, abuse, unlawful behavior, or a safety or health danger
- e. Belief that nothing would be done to stop it
- f. Belief that nothing could be done to stop it
- g. Belief that it would not happen again
- h. Belief that someone else had already reported it
- i. Concern that I would be seen as disloyal (cost to relationships)
- j. Concern that it might negatively impact my relationship with my co-workers (cost to relationships)
- k. Concern that it might get someone in trouble
- l. Concern that it might harm the reputation of my organization/agency
- m. Concern that it might cause other things to be investigated
- n. Concern that it might affect my performance appraisal (retaliation)
- o. Concern that it might affect my ability to get a performance award (retaliation)
- p. Concern that it might affect my ability to get training (retaliation)
- q. Concern that it might affect my ability to get a promotion (retaliation)
- r. Concern that management might become less tolerant of any small mistakes I might make (retaliation)
- s. Concern that management might become less willing to grant me any favors that are optional for them (retaliation)
- t. Concern that I might be retaliated against in another way not mentioned above (retaliation)
- u. A lack of knowledge about to whom I should report it

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