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The power of moral concerns in predicting whistleblowing decisions

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ABSTRACT

Whistleblowers risk great personal cost to expose injustice. While their actions are sometimes deemed morally courageous, existing evidence that whistleblowers are primarily motivated by moral concerns is mixed. Moreover, little is known about the extent to which moral concerns predict whistleblowing relative to other organizational and situational factors. To address these gaps, we present two studies demonstrating the power of moral concerns in predicting whistleblowing decisions. Study 1 uses a large cross-sectional dataset of federal employees ($N = 42,020$) to test how moral concerns predict real-world whistleblowing decisions relative to other factors. Study 2 provides a more controlled replication of the association between moral concerns and whistleblowing decisions in an online sample of the U.S. workforce. Results revealed that moral concerns consistently predicted whistleblowing decisions above and beyond other organizational and situational factors. Specifically, whistleblowing decisions were associated with a tradeoff between moral concerns; whereby, concerns for the fair treatment of others beyond one's organization were associated with reporting unethical behavior, while loyalty to one's organization was associated with *not* reporting unethical behavior. Organizational factors, such as whether the organization educates its employees about how to disclose wrongdoing, showed a somewhat weaker association with whistleblowing decisions across studies. However, they were the only significant predictors of *how* people blew the whistle; that is, reporting unethical behavior through internal versus external channels. Together, these findings reveal important psychological motivations underlying whistleblowing, highlighting the power of moral concerns in these decisions and supporting conceptualizations of whistleblowing as an important example of moral courage.

1. Introduction

Whistleblowers – people who report unethical behavior occurring within their own group to an authority – play a critical role in exposing injustice and corruption. Whistleblowers helped recover fraudulent charges totaling \$3.7 billion in 2017 alone (U.S. Department of Justice, 2017). While whistleblowing is on the rise, unfortunately, so is retaliation against it (Near & Miceli, 2016). Many whistleblowers, particularly those who do not report anonymously, experience harassment and emotional trauma (Kenny, Fotaki, & Scriver, 2018; van der Velden, Pecoraro, Houwerzijl, & van der Meulen, 2018), quit under duress, or are fired outright (Bjørkelo, 2013; Dyck, Morse, & Zingales, 2010; Rehg, Miceli, Near, & Van Scotter, 2008). This backlash may explain in part why so many people refrain from speaking up: in one study, only 9.4% of people blew the whistle when given the opportunity (Bocchiaro, Zimbardo, & van Lange, 2012).

Why do whistleblowers decide to speak up given the substantial

personal risks they face? On the one hand, some scholars believe that whistleblowers act out of moral concerns for the well-being of others (Caillaud & Petit, 2018; Lindblom, 2007; O'Sullivan & Ngau, 2014; Watts & Buckley, 2017), even comparing whistleblowers to saints and prophets (Avakian & Roberts, 2012b; Grant, 2002). On the other hand, opponents of whistleblowing claim that whistleblowers are “malcontents” (Devine & Aplin, 1986), acting not out of some moral sense of justice, but rather out of selfish concerns of personal gain or vengeance. Given these competing views of whether or not whistleblowers are driven by moral concerns, it is currently difficult to say whether whistleblowers exhibit moral courage, which is defined not just by overcoming the threat of personal harm, but doing so for the sake of upholding a moral principle or value (Baumert, Halmburger, & Schmitt, 2013; Lopez, O'Byrne, & Petersen, 2003; Osswald, Greitemeyer, Fischer, & Frey, 2010; Sekerka & Bagozzi, 2007; Skitka, 2012). Here, we address this disagreement, and whether whistleblowing reflects an act of moral courage, by investigating the extent to which moral concerns predict

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whistleblowing decisions.

1.1. Do moral concerns motivate whistleblowing?

Moral concerns, or the personal concerns an individual has about the well-being of others,¹ have long been assumed to lie at the heart of whistleblowing decisions. Numerous conceptual models of whistleblowing propose that morality is a primary motivator of whistleblowing (Avakian & Roberts, 2012a; Cailleba & Petit, 2018; Lindblom, 2007; O'Sullivan & Ngau, 2014; Watts & Buckley, 2017). Similarly, claims about the normative standing of whistleblowers argue that morality is the most important motivation for reporting unethical behavior (Alleyne, Hudaib, & Pike, 2013; Gundlach, Douglas, & Martinko, 2003; Miceli, Near, & Dworkin, 2009).

Despite this theoretical consensus, evidence from the few empirical studies investigating how moral concerns predict whistleblowing decisions is more mixed. Studies measuring self-reported judgments of hypothetical scenarios have found that people who score higher on tests of moral reasoning are more likely to blow the whistle (Brabeck, 1984; Liyanarachchi & Newdick, 2009), while the opposite relationship was observed in a field experiment on actual whistleblowing decisions (Miceli, Dozier, & Near, 1991). One study suggests that being motivated by self-interest is associated with a lower likelihood of whistleblowing (Dalton & Radtke, 2013), while other work has shown that whistleblowing rates dramatically increase when people receive some monetary or personal gain for blowing the whistle (Andon, Free, Jidin, Monroe, & Turner, 2018; Butler, Serra, & Spagnolo, 2017; Dyck et al., 2010). By one estimate, whistleblowers may seek some benefit for themselves in nearly half of all cases (Miceli & Near, 1997), suggesting that, at the very least, a degree of self-interest might drive some proportion of whistleblowing decisions (Callahan & Dworkin, 1994; Dozier & Miceli, 1985). Finally, meta-analyses and review papers have concluded that associations between personal moral values and whistleblowing are inconsistent across studies and contexts (Mesmer-Magnus & Viswesvaran, 2005; Near & Miceli, 1996; Vadera, Aguilera, & Caza, 2009), demonstrating that more evidence is needed to determine the precise relationship between moral concerns and whistleblowing decisions.

1.2. The whistleblower's dilemma

One potential reason that the relationship between morality and whistleblowing has been inconsistent in prior work is that whistleblowing decisions involve a complex tradeoff between multiple other-regarding concerns or moral values. Specifically, whistleblowers must decide whether to prioritize concerns for their own group in the name of loyalty, or extend consideration to people beyond their immediate group in the name of fairness or justice (Dungan, Waytz, & Young, 2014, 2015; Hersh, 2002; Uys & Senekal, 2008). As proposed by other research and theory in moral psychology (Graham et al., 2011; Haidt & Joseph, 2007; Hildreth, Gino, & Bazerman, 2016), we define loyalty as concern for the well-being of one's immediate ingroup, and fairness as concern for the well-being (i.e., equal treatment) of other people beyond the boundaries of one's ingroup. Both fairness and loyalty are fundamental moral values (Graham et al., 2011; Haidt & Joseph, 2007; Walker & Hennig, 2004) that emerge early in development (Lieberman & Shaw, 2019; Misch, Over, & Carpenter, 2018; Warneken, 2018) and are endorsed across groups and cultures (Graham, Haidt, & Nosek, 2009; Shweder, Much, Mahapatra, & Park, 1997). In our own past work, we found that individual differences in the way people navigate the tradeoff between these two moral concerns predicted whistleblowing

decisions: the more people valued fairness over loyalty, the more willing they were to blow the whistle (Waytz, Dungan, & Young, 2013). Moreover, in this same work, experimentally manipulating endorsement of fairness versus loyalty increased actual whistleblowing in an online marketplace. These results suggest that moral concerns for the well-being of others, whether in one's immediate ingroup or in society more broadly, critically drive whistleblowing decisions.

While this work suggests a promising link between moral concerns and whistleblowing decisions, there are at least two limitations that need to be addressed. First, the work above was conducted on a controlled population of laboratory participants rather than in a real-world context. Second, it is currently unclear to what extent moral concerns influence whistleblowing decisions compared to other contextual factors that have been the primary focus of previous work on whistleblowing (Dyck et al., 2010; Miceli, Near, & Dworkin, 2013; Near & Miceli, 2008). Work in organizational behavior has described whistleblowers as rational actors who calculate the perceived personal costs and benefits of their decision (Cassemetis & Wortley, 2013; Gundlach et al., 2003; Henik, 2008; Miceli, Near, Reh, & Van Scotter, 2012). In line with this view, a number of factors related to one's organization (e.g., whether an organization explicitly supports whistleblowing, educates its employees about channels for reporting unethical behavior, and protects the identity of whistleblowers) and situation (e.g., having sufficient proof of wrongdoing, fear of retaliation) have consistently been shown to influence willingness to blow the whistle (Cassemetis & Wortley, 2013; Near & Miceli, 2008; Vadera et al., 2009), suggesting these contextual factors might outweigh any effect of personal values on actual whistleblowing decisions (Mesmer-Magnus & Viswesvaran, 2005). Thus, even if moral concerns do have some small effect on whistleblowing, they may not significantly relate to whistleblowing decisions in real-world contexts.

1.3. The present research

To address these concerns, we conducted two studies investigating the power of moral concerns in predicting whistleblowing decisions. Based on prior work on the moral tradeoff that whistleblowers face, we hypothesized that moral concern for the people within one's organization (i.e., concerns about loyalty) would be associated with a lower likelihood of blowing the whistle, while moral concerns for individuals generally, beyond those in one's organization (in the name of fairness or justice) would be associated with a greater likelihood of blowing the whistle. Critically, we also predicted that moral concerns would uniquely predict whistleblowing decisions above and beyond the effects of other contextual factors.

In Study 1, we test these hypotheses by utilizing data from the 2010 Merit Principles Survey collected by the U.S. Merit Systems Protection Board (MSPB, 2012). This dataset provides several key advantages for the current investigation. First, it asks a large sample of government employees whether or not they blew the whistle on unethical behavior at their organization, giving us sufficient power to investigate whistleblowing in a real-world context. Second, it measures a wide range of factors that potentially relate to whistleblowing decisions, including moral concerns, perceptions of the organization and its leaders, job satisfaction, and motivations, allowing us to directly compare how these different factors predict whistleblowing decisions. Third, it measures hypothetical intentions to blow the whistle as well as actual self-reported whistleblowing behavior. This is particularly important given that people over-report their intentions to blow the whistle relative to their actual whistleblowing decisions (Bocchiaro et al., 2012; see also, Kawakami, Dunn, Karmali, & Dovidio, 2009; Woodzicka & LaFrance, 2001), and predictors of whistleblowing intentions do not always correspond to predictors of actual whistleblowing (Mesmer-Magnus & Viswesvaran, 2005). Additionally, the survey tracks whether whistleblowers report the wrongdoing they observed through internal channels (e.g., to their supervisor within the organization) versus external

¹ Here, we focus not on morality itself (the system of principles one has about what behaviors are right and wrong), but rather on specific moral concerns about the well-being of others.

channels (e.g., to the media or other groups outside their organization). Whistleblowers who use external channels have been shown to have lower organizational commitment and concern about damaging their company (Chen & Lai, 2014), leading to characterizations of external whistleblowing as an antisocial act (Barnett & Salomon, 2012; Miceli & Near, 1997; though see Bouville, 2008, and Jos, Tompkins, & Hays, 1989, for counterarguments). This characterization predicts that people who choose to use external channels to blow the whistle would be the least likely to be motivated by moral concerns. Comparing what factors predict the use of external versus internal channels is therefore a particularly conservative test of the role that moral concerns play in whistleblowing decisions.

To our knowledge, only two papers have used the 2010 Merit Principles Survey dataset to examine which factors predict whistleblowing. Study 1 adds to this work in several important ways. First, Cho and Song (2015) focused only on predicting people's likelihood of blowing the whistle in hypothetical situations. In Study 1, we investigate which factors predict both hypothetical and actual whistleblowing decisions. Second, Caillier's (2016) work with the Merit Principles Survey focused specifically on how 11 items, in addition to demographic factors, predicted whistleblowing behavior. In particular, he focused on how Public Service Motivation (Perry, 1996), fear of retaliation, and the severity of the act predict whistleblowing. Here, we conduct a series of exploratory and confirmatory factor analyses on a much larger set of predictors (147 items) to better capture how a wide range of factors predict whistleblowing.

Study 2 was a conceptual replication of a key effect in Study 1. While the cross-sectional nature of the Merit Principles Survey has many advantages, the data cannot be used to address whether whistleblowers express moral concerns prior to whistleblowing decisions. In Study 2, we collected additional data in a more controlled setting to address this issue. Additionally, we also measured people's expectations of what factors predict whistleblowing decisions to test the extent to which people underestimate the power of moral concerns.

2. Study 1

The MSPB was established in 1979 to protect values of integrity, public service, efficiency, and the fair and equitable treatment of employees within the federal government. Over the past several decades, the MSPB has conducted several large, Government-wide surveys of federal employees probing the incidence, causes, and consequences of unethical behavior. We analyze data from their 2010 Merit Principles Survey – the latest dataset to include direct questions about whistleblowing behavior.

2.1. Methods

2.1.1. Sample

Participants were full-time federal employees selected from 18 different departments and 6 independent agencies representing 97% of all permanent, full-time federal employees. Using a stratified random sampling technique, 71,970 employees were invited to complete the survey, and 42,020 responded – a response rate of 58%.

2.1.2. Analyses summary

In the following sections, we report all information about the measures included in our analyses, manipulations to the dataset, and any exclusions of participants or variables. *Measurements* describes all variables of interest that were included for analyses. *Missing data* describes the procedure we used to address missing data issues. *Classifying whistleblowers* describes how we determined the final sample size of whistleblowers and non-whistleblowers in the dataset. *Factor analyses* describes the results of an initial analysis of the structure underlying all variables of interest in an independent sample and a follow-up analysis confirming that the structure identified in the

exploratory stage adequately fits responses in the sample used for hypothesis testing. To foreshadow the results, analyses identified 14 factors (representing moral concerns, as well as organizational and situational factors) that were then entered into regression analyses to predict whistleblowing decisions.

2.1.3. Measurements

The survey included 325 variables probing employees' experiences and opinions of their workplace (the full survey is accessible at <https://www.mspb.gov/studies/surveys.htm>). We identified a comprehensive list of 147 variables to include as potential predictors of whistleblowing in our initial analysis. Based on previous work showing the impact of organizational factors on whistleblowing decisions (Kaptein, 2011; Loe, Ferrell, & Mansfield, 2000; Miceli & Near, 1984, 1988; Near & Miceli, 2008), we included items measuring how employees perceive their organizational climate like how fair versus discriminatory it is, how satisfied they are with their supervisors, and the extent to which their organization has educated them about who to report wrongdoing to and what their rights would be if they did. Given the impact of financial incentives, job satisfaction, and organizational commitment on whistleblowing (Berry, 2004; Brief & Motowidlo, 1986; Cassematis & Wortley, 2013; Dyck et al., 2010; Mesmer-Magnus & Viswesvaran, 2005; Near & Miceli, 1996; Taylor & Curtis, 2010), we included a number of items related to how engaged and motivated employees felt at their workplace. We also included situational variables that have had a large influence on whistleblowing in previous work (Cassematis & Wortley, 2013; Gao & Brink, 2017; Mesmer-Magnus & Viswesvaran, 2005; Somers & Casal, 2011), such as perceived severity of the wrongdoing and threat of retaliation. Finally, we included questions related to personal moral values; specifically, concerns about being disloyal and broader concerns for the rights and wellbeing of others, to test our hypothesis about the unique contribution of moral concerns in predicting whistleblowing decisions (Dungan et al., 2015; Waytz et al., 2013; Cf. Hersh, 2002, and Miethe, 1999).

These variables were spread across a number of sections in the Merit Principles Survey. We included all scale items from the Engagement (25), Leadership Impact (16), and Merit Systems Principles (26) sections. We included all scale items in the Whistleblowing section (54) except for 22 items that only whistleblowers answered (meaning they could not be used to predict whether or not someone decided to blow the whistle). We also included all unique scale items from the Motivations section (25), excluding 11 redundant items. We included the only scale item from the Workplace Violence section (asking if their agency takes sufficient steps to ensure their safety from violence occurring at their workplace). Finally, we also included 3 demographic items (years employed, education, supervisory status), included in past studies of whistleblowing (Kennedy & Anderson, 2017; Mesmer-Magnus & Viswesvaran, 2005; Near & Miceli, 2008), to check the robustness of our effects (see Supplementary materials). No items were included from sections on telework, professional affiliation, union partnership, or disabilities. An additional 25 variables were used as either outcome measures or as descriptors of the wrongdoing that people observed, meaning 175 variables in total were analyzed in some way (see Table S1 in Supplementary material for the full list of variables).

2.1.4. Missing data

Just over half of participants (19,988; 52.28%) provided complete data. To avoid introducing bias when imputing missing data, we first eliminated 35 variables that were missing over 10% of cases (Bennett, 2001; Dong & Peng, 2013). Little's Test was significant ($p < .001$) suggesting the data was not missing completely at random. There were no clear patterns of missingness between variables, so we assume data is missing at random (Schafer & Graham, 2002). Moreover, Schafer (1999) considers < 5% missing data insignificant, and for the remaining variables, the median percent of cases replaced was only 1.4%.

Table 1

Participants who observed wrongful activity were classified according to their responses to the question: Did you report this activity to any of the following? (Please mark all that apply). All response options are shown.

Inactive-observer (N = 1312)	Not included in analysis (N = 601)	Whistleblower (N = 1764)	
		Internal (N = 1405)	External (N = 359)
I did not report the activity	Family member or friend Co-worker Other	Immediate supervisor Higher level supervisor Higher level agency official Agency Inspector General	Office of Special Counsel Government Accountability Office Law enforcement official Union representative News media Congressional staff/member of Congress Advocacy group outside the Government

No missing values were imputed for outcome variables, but they were included in the dataset used to calculate estimates of missing values (Dong & Peng, 2013). We employed multiple imputation using chained equations (10 imputations with 10 iterations each) using the “mice” package in R (Buuren & Groothuis-Oudshoorn, 2010).

2.1.5. Classifying whistleblowers

Participants indicated (forced-choice response: yes/no) whether or not during the last year they had, “personally observed or obtained direct evidence of one or more illegal or wasteful activities involving [their] agency”. Participants responding “no” were classified as Non-Observers (N = 34,463), and those responding “yes” were classified as Observers (N = 3770). Observers were further divided into distinct groups based on their response to a question probing who they reported the illegal activity to. Inactive Observers (N = 1312) did not report the activity. Whistleblowers (N = 1764) reported the activity to one or more of the following (see Table 1): their immediate supervisor, a higher-level supervisor or agency official, the Agency Inspector General, the Office of Special Counsel, the Government Accountability Office, a law enforcement official, a union representative, the news media, a congressional staff member or member of Congress, or an advocacy group outside the Government. Observers who reported the activity only to friends, family, co-workers, or an unknown party (as indicated by selecting “other”), were excluded from analyses (N = 601; see Table 1), as it is unclear whether this action constitutes whistleblowing (i.e., reporting to an authority that is able to address the wrongdoing). We note that this definition of whistleblowing as an employee disclosing wrongdoing by organization members to persons or organizations who could take corrective action is consistent with the most frequent use of the term in research (Brennan & Kelly, 2007; Near & Miceli, 2008). Moreover, while reporting to friends, family, and co-workers may be more akin to gossip (Feinberg, Willer, Stellar, & Keltner, 2012) than whistleblowing, counting these targets as whistleblowing nevertheless replicates a key effect of moral concerns on whistleblowing decisions (see Supplementary Analysis 1 for more details). An additional 93 participants who reported observing an illegal activity did not answer the question about who they reported the activity to and were also removed from analysis.

Whistleblowers could also be distinguished by whether they used an internal or external channel to blow the whistle. Whistleblowers using internal channels (N = 1405) reported to an immediate or higher-level supervisor, a higher-level agency official, or their agency’s Inspector General. Whistleblowers using external channels (N = 359) reported to the Office of Special Counsel, the Government Accountability Office, a law enforcement official, a union representative, the news media, a congressional staff member or member of Congress, or an advocacy group outside the Government. Many whistleblowers who report through external channels first attempt reporting through internal channels (Culiberg & Mihelič, 2017), so consistent with previous research (Miceli & Near, 1992; Near & Miceli, 2008), participants who reported the activity to both internal and external channels (N = 272)

were included in the external group for subsequent analyses. Classified this way, we capture the entire whistleblowing process (not just how it started, but where it ended): internal whistleblowers never reported to external authorities while external whistleblowers ended up using external channels, whether or not they first reported internally.

If participants observed wrongdoing, they answered a series of questions describing the most serious problem they personally observed. Most of the wrongdoing that people observed involved waste (caused by deficient goods or services, badly managed programs, or ineligible people receiving funds; 60%), followed by unfairness (bribery, abusing an official position for personal benefit, unfair advantage in selecting contractors/consultants/vendors; 14%), tolerating a situation or practice which poses danger to public health or safety (4%), and stealing federal funds or property (4%). An additional 18% of wrongdoing did not fit within those categories, but was identified by the participant as “a serious violation of law or regulation.” Nearly all of the wrongdoing (98.75%) originated or occurred within the observer’s own work group and 47.40% of observers reported that the wrongdoing extended to other workgroups within their agency. In most cases, the wrongdoing was not an isolated incident: for 47% of cases the wrongdoing occurred frequently, compared to 18% of cases in which it occurred only once or rarely. Importantly, the observed wrongdoing was quite serious, costing more than \$100,000 in 35% of cases. An additional 17% of people who observed wrongdoing reported that a dollar value could not be placed on the activity.

2.1.6. Factor analyses

We conducted a series of factor analyses to uncover the latent factor structure underlying the large list of variables selected as potential predictors of whistleblowing decisions. The vast majority of people surveyed did not report personally observing wrongdoing within their organization in the past year (Non-Observers, 90%) meaning their responses could not be used in the main analyses predicting whistleblowing decisions. However, this group answered the same questions as Observers (minus the questions describing the wrongdoing people observed), so data from this group were used as a separate dataset for exploratory factor analysis (Osborne, Costello, & Kellow, 2008).

Using the “psych” package in R (Revelle, 2018), we conducted an exploratory factor analysis with ordinary least squares estimation of parameters and direct oblimin rotation (allowing factors to be correlated). Nineteen factors with eigenvalues > 1 emerged, explaining 56% of the variance. We compared these eigenvalues to eigenvalues generated from a correlation matrix of a randomly generated dataset using parallel analysis (Horn, 1965; Keeling, 2000) which indicated that only 18 factors should be retained. However, parallel analysis can sometimes overextract factors, particularly when factors are correlated and the number of items per factor is low (Auerswald & Moshagen, 2019; Glorfeld, 1995) and three of the 18 factors did not have at least 3 items with factor loadings over 0.50. After examining the factor loadings and theoretical interpretability (Matsunaga, 2010), we ultimately selected 14 factors. At least 3 items loaded onto each factor, and all retained

items had factor loadings of 0.50 or higher. Furthermore, no items had cross loadings with another factor > 0.26 (See Supplementary Table S2 for all factor loadings).

Importantly, given the subjective judgments involved in exploratory factor analysis (Schmitt, 2011), we conducted a follow-up analysis to validate that the factor structure identified in the exploratory phase fit the structure of the Observers' data which will then be used for predicting whistleblowing decisions. We ran a confirmatory factor analysis on the 14-factor model using the lavaan package in R (Rosseel, 2012). The chi-square test for the model was significant ($X^2(1738) = 16,048, p < .001$); however, rejection of the test can be expected in large samples where the chi-square test captures slight deviations from the exact fit of the model (Bentler & Bonnet, 1980). Instead, we rely on several goodness-of-fit indices to evaluate the models. Based on indices weighing both fit and parsimony, the 14-factor model showed acceptable fit (RMSEA = 0.047, 95% CI [0.046, 0.047]; SRMR = 0.04; CFI = 0.90; TLI = 0.89). Specifically, the root mean square error of approximation (RMSEA) is lower than the ideal cut off of 0.06 and the standardized root mean square residual (SRMR) is below 0.08 (Hu & Bentler, 1999; Steiger, 2007).

For analysis, responses to items within each factor were averaged together for each participant. Table 2 gives descriptive statistics for each factor. Items within each factor showed good to excellent reliability (all α 's > 0.70; Table 3), and no two factors were correlated > 0.67 (see Table S3 in Supplementary material), demonstrating acceptable discriminant validity (i.e., no factors share > 50% variance; Hair, Black, Babin, Anderson, & Tatham, 2009). Importantly, the 14 factors identified by confirmatory factor analysis align clearly with conceptual distinctions between the items resulting in highly interpretable factors.

Five factors captured employee judgments about their organization or agency as a whole. The Organizational Fairness factor measured perceptions of fair practices within the organization (e.g., "My organization treats employees fairly"). The Whistleblowing Education factor measured how well the organization educated employees about how and to whom to blow the whistle (e.g., "My organization has educated me about what my rights would be if I disclosed wrongdoing"). Relatedly, the Whistleblowing Agency Understanding factor measured knowledge about the role of various official organizations when it comes to responding to reports of wrongdoing (e.g., the extent to which an employee understands the role of their "agency's Office of the Inspector General"). The Job Recognition factor measured perceptions that the organization recognizes and rewards when employees perform well (e.g., "My organization rewards excellent performance"). Finally, the Organizational Efficiency factor measured employee perceptions of how smoothly their organization functions (e.g., "My organization uses the workforce efficiently and effectively").

Three factors captured concerns specific to the situational context of blowing the whistle. The Importance of Protections factor measured

how important employees felt their safety (e.g., they "would be protected from any sort of reprisal" or that their "identity would be kept confidential") would be in encouraging them to blow the whistle. Similarly, the Fear of Reprisal factor measured the extent to which concerns about receiving reprisal would factor into whistleblowing decisions (e.g., "concern that [whistleblowing] might affect my ability to get a promotion"). Finally, the Doubts About the Act factor included measured concerns about not having sufficient proof about the illegal activity, or that the activity was not serious enough to warrant a response (e.g., "concern that it might not be serious enough" or "that I had sufficient proof").

Four factors measured various aspects of employee satisfaction and motivation at their workplace. The Job Satisfaction factor measured these feelings most directly (e.g., "I have the resources to do my job well" and "I feel highly motivated in my work"). The Leadership Satisfaction factor measured how happy employees were with their supervisors and managers (e.g., "My supervisor provides constructive feedback on my job performance" and "Overall, I am satisfied with the managers above my immediate supervisor"). The Job Barriers factor measured the extent to which employees felt that aspects of the organization were negatively impacting their job performance (e.g., "The performance and/or conduct of other employees are the primary reasons my job performance is not higher"). Finally, the Job Benefits factor measured how important financial and other self-advancing benefits are to the employees (e.g., how important their "awards and bonuses" or their "opportunity for advancement" is in "seeking/continuing employment in [their] organization").

Finally, of key interest to the current investigation were two factors probing personal moral concerns and values. These factors are distinct from the factors above in that they reflect the internal values that a person holds, as opposed to perceptions about the situational context (e.g., if they had sufficient proof of the wrongdoing), or judgments of the organization as a whole (e.g., the extent to which the organization operates fairly as a whole versus the extent to which they value fairness). Additionally, these factors do not capture judgments about "morality" per se (that is, what actions are right or wrong in the abstract), but rather concerns that an individual has about the well-being of other individuals, groups, and relationships. This is in stark contrast to the factors above that measure self-interested concern for the employee's own well-being (e.g., how motivated they are at their job or concern that whistleblowing might affect their own ability to get a promotion).

The Loyalty factor measured concern that blowing the whistle would not be in the best interest of the employee's group (Hildreth, Gino, & Bazerman, 2015); specifically, that whistleblowing would negatively impact the employee's relationship with their coworkers and harm their organization (e.g., the extent to which "concern that it might harm the reputation of [their] organization/agency" or "concern that it

Table 2
Descriptive statistics for each factor.

Factor	Mean	SD	Range	Scale
Organizational Fairness	3.95	0.72	1–5	Strongly disagree – strongly agree
WB Education	2.94	1.22	1–5	Strongly disagree – strongly agree
WB Agency Understanding	2.66	1.08	1–4	Not at all – great extent
Job Recognition	2.67	1.17	1–5	Strongly disagree – strongly agree
Organizational Efficiency	4.08	0.65	1–5	Strongly disagree – strongly agree
Importance of Protections	3.25	0.96	1–5	Unimportant – very important
Fear of Reprisal	3.25	1.25	1–4	Not at all – great extent
Doubts	2.30	0.81	1–4	Not at all – great extent
Job Satisfaction	2.20	1.00	1–5	Strongly disagree – strongly agree
Leadership Satisfaction	1.95	0.81	1–5	Strongly disagree – strongly agree
Job Barriers	2.10	0.86	1–5	Strongly disagree – strongly agree
Job Benefits	3.62	0.88	1–5	Strongly disagree – strongly agree
Loyalty	2.61	1.05	1–4	Not at all – great extent
Concern for Others	2.32	0.91	1–5	Strongly disagree – strongly agree

Table 3
Items and reliability for each factor. Instructions for the items are shown in bold.

Factor	Item
Organizational Fairness ($\alpha = 0.89$)	My organization... ...holds fair and open competition for job vacancies ... takes steps to prevent prohibited discrimination ... treats employees fairly ... selects the best-qualified candidates when filling jobs ... recruits a diverse pool of applicants for job vacancies
Whistleblowing Education ($\alpha = 0.92$)	Please indicate your level of agreement or disagreement with the following statements. My agency has educated me about the purpose of the Office of the Inspector General My agency has educated me about how I can anonymously disclose wrongdoing My agency has educated me about what my rights would be if I disclosed wrongdoing
Whistleblowing Agency Understanding ($\alpha = 0.86$)	To what extent do you understand the role of each of the following organizations when it comes to responding to reports of wrongdoing? The Government Accountability Office (GAO) The U.S. Office of the Special Counsel (OSC) Your agency's Office of the Inspector General (OIG) The Occupational Safety and Health Administration (OSHA)
Job Recognition ($\alpha = 0.91$)	Please indicate your level of agreement or disagreement with the following statements. I am satisfied with the recognition and rewards I receive for my work My organization rewards excellent performance Recognition and rewards are based on performance in my work unit My organization recognizes excellent performance When I put forth my best effort, I achieve a high performance appraisal rating
Organizational Efficiency ($\alpha = 0.81$)	My organization... ...eliminates unnecessary functions and positions ...uses the workforce efficiently and effectively ...addresses poor performers effectively
Importance of Protections ($\alpha = 0.73$)	How important, if at all, would each of the following be in encouraging you to report an illegal or wasteful activity? Your identity would be kept confidential by the people to whom you reported the activity You would be protected from any sort of reprisal You would be able to report it without disclosing your identity
Fear of Reprisal ($\alpha = 0.95$)	If tomorrow you were to observe a health or safety danger, unlawful behavior, fraud, waste, or abuse, to what extent do you think each of the following would factor into your decision on whether or not to report the wrongdoing? Concern that it might affect my ability to get a promotion Concern that it might affect my ability to get a performance award Concern that it might affect my ability to get training Concern that management might become less willing to grant me any favors that are optional Concern that management might become less tolerant of any small mistakes I might make Concern that I might be retaliated against in another way not mentioned above Concern that it might affect my performance appraisal
Doubts About the Act ($\alpha = 0.86$)	If tomorrow you were to observe a health or safety danger, unlawful behavior, fraud, waste, or abuse, to what extent do you think each of the following would factor into your decision on whether or not to report the wrongdoing? Concern that it might not be serious enough Concern that the event might not rise to the level of fraud, waste, abuse, unlawful behavior... Concern that I had sufficient proof
Job Satisfaction ($\alpha = 0.86$)	Please indicate your level of agreement or disagreement with the following statements. My work unit produces high quality products and services I have the resources to do my job well My job allows me to perform a variety of tasks that require wide range of knowledge/skills My job has a significant positive impact on others, either within the org. or the public I have the opportunity to perform well at challenging work I feel highly motivated in my work
Leadership Satisfaction ($\alpha = 0.91$)	Please indicate your level of agreement or disagreement with the following statements. My supervisor provides constructive feedback on my job performance My supervisor provides timely feedback on my job performance Overall, I am satisfied with the managers above my immediate supervisor
Job Barriers ($\alpha = 0.79$)	Please indicate your level of agreement or disagreement with the following statements. The performance/conduct of other employees are the primary reasons my job performance is not higher The performance/conduct of my supervisors and managers are the primary reasons my job performance is not higher Barriers to success, such as constraining rules or work processes, under-informed coworkers, or office politics, are the primary reasons my performance is not higher
Job Benefits ($\alpha = 0.84$)	In each of the following questions, please indicate how important each job factor is to you in seeking and continuing employment in your organization My awards and bonuses Being granted informal perks My opportunity for advancement The appreciation I receive My training and development opportunities Being included in important discussions and decisions Being forgiven for small mistakes

(continued on next page)

Table 3 (continued)

Factor	Item
Loyalty ($\alpha = 0.89$)	If tomorrow you were to observe a health or safety danger, unlawful behavior, fraud, waste, or abuse, to what extent do you think each of the following would factor into your decision on whether or not to report the wrongdoing? Concern that it might get someone in trouble Concern that it might harm the reputation of my organization/agency Concern that it might cause other things to be investigated Concern that it might negatively impact my relationship with my co-workers Concern that I would be seen as disloyal
Concern for Others ($\alpha = 0.76$)	Please indicate your level of agreement or disagreement with the following statements. Making a difference in society means more to me than personal achievements Meaningful public service is important to me I am prepared to make enormous sacrifices for the good of the agency ^a I am not afraid to go to bat for the rights of others even if it means I will be ridiculed Being able to serve the public is important to me in seeking and continuing employment

^a We note that doing something “for the good of the agency” could be construed either as loyalty in the case of agency wrongdoing, or as commitment to a “greater good” more in line with fairness and justice. Given this ambiguity, we default to including this item based on the results of the factor analyses (the reliability of this factor drops to 0.72 when this item is removed).

might negatively impact [their] relationship with [their] coworkers” would factor into their decision whether or not to report the wrongdoing). The Concern for Others factor measured concern for people and society beyond the employee's immediate group (e.g., “Making a difference in society means more to me than personal achievements” and “I am not afraid to go to bat for the rights of others, even if it means I will be ridiculed”). While these two factors are operationalized differently from previous work on the tension whistleblowers face between loyalty and fairness (Waytz et al., 2013), they capture the key difference between prioritizing concerns for one's immediate ingroup (e.g., one's organization, co-workers) and extending care and fairness more broadly to other people outside one's organization (e.g., society at large).

2.2. Results and discussion

2.2.1. Hypothetical whistleblowing

Participants responded to a series of questions indicating hypothetically how likely they would be to blow the whistle. Specifically, the item asked, “how likely would you be to blow the whistle when the wrongdoer is: a) your supervisor, b) a higher-level supervisor, c) a coworker in their work group, d) a Federal employee outside their work group, e) a contractor or vendor, and f) a political appointee in their agency.” Responses were given on a 5-point scale from “very unlikely” to “very likely”. Responses for each of these wrongdoers were averaged to form a single measure of each participant's likelihood of blowing the whistle ($\alpha = 0.92$; see Table S4 in Supplementary material for analyses of each target separately).

We then entered averages for each factor into a linear regression predicting the likelihood that Observers would hypothetically blow the whistle (in Supplementary Analysis 2 we report a replication of our key effects of moral concerns on whistleblowing intentions using data from Non-Observers). Given the large sample size available with the Merit Principles Survey, this analysis had 80% power to detect very small effects (e.g., $f^2 = 0.01$) at $\alpha = 0.05$. Concern for Others had the largest positive association with hypothetical whistleblowing (Table 4). Whistleblowing Agency Understanding and Job Benefits also emerged as significant positive factors. In contrast, Loyalty and Fear of Reprisal were negatively associated with hypothetical whistleblowing. Notably, both factors measuring moral concerns showed the strongest relationship to hypothetical whistleblowing: Loyalty and Concern for Others have standardized coefficients with the largest absolute value and explain the greatest amount of unique variance in the regression model.

2.2.2. Reports of actual whistleblowing

We next conducted a binary logistic regression predicting whether

someone who observed wrongdoing reported being a whistleblower versus an inactive observer (i.e., did not report the wrongdoing). Regressing responses on each of the 14 factors simultaneously onto whistleblowing decisions revealed that both Concern for Others was again positively associated with whistleblowing and the magnitude of this effect was the largest of all factors included in the analysis. Specifically, the odds of blowing the whistle increase by 1.32 times for each 1-unit change in the average response to items captured by the Concern for Others factor. Organizational Fairness and Whistleblowing Agency Understanding were also positively associated with whistleblowing, suggesting that organizations can play a role in encouraging people to blow the whistle.²

In contrast, Loyalty again had a negative association with whistleblowing: for every 1-unit increase in concerns about loyalty, the odds of blowing the whistle decrease by 0.119 (Table 5). In line with previous research (Near & Miceli, 2008), Doubts had a negative relationship with whistleblowing, suggesting that the more uncertain people are about the seriousness or evidentiary proof of wrongdoing, the less likely they are to blow the whistle. Finally, Importance of Protections was also negatively associated with whistleblowing. In other words, the greater importance people placed on being anonymous and being protected from reprisal, the less likely they were to decide to blow the whistle. Fear of Reprisal and Job Benefits were both associated with the likelihood of blowing the whistle in hypothetical situations but did not emerge as significant predictors of actual whistleblowing decisions.

To check the robustness of these effects, we entered several demographic factors of the Observers (years employed, education level, and supervisory status) as a second step of the regression. Adding these factors did not significantly improve the regression model ($p = .071$), and both moral concerns remained significant predictors (see Supplementary Analysis 3 for more details). Additionally, in Supplementary Analysis 4, we include aspects of the observed wrongdoing (frequency and perceived monetary damage) as controls in the regression model. Adding factors related to the observed wrongdoing did significantly improve the model ($p < .001$), but Concern for Others remained a significant positive predictor of whistleblowing, while the negative effect of Loyalty on whistleblowing became marginal (see Supplementary Analysis 4 for more details). Supplementary Analysis 5 shows similar results when including all controls from the previous 2 analyses in a single regression model. Finally, in Supplementary

² We also observed a positive non-significant association between Job Barriers and whistleblowing which may indicate that as the incidence of problematic behavior to report increases, so does the likelihood of whistleblowing (see also, the effect of frequency of wrongdoing on whistleblowing behavior in Supplementary Analysis 4 and 5).

Table 4
Results of a linear regression predicting the hypothetical whistleblowing intentions of Observers (N = 3581) from each factor.

Predictors	B	SE B	95% CI		β	t	p
			Lower	Upper			
Organizational Fairness	-0.037	0.024	-0.085	0.01	-0.020	-1.543	0.123
WB Education	0.001	0.018	-0.035	0.036	0.001	0.028	0.978
WB Agency Understanding	0.073	0.024	0.025	0.121	0.059	2.995	0.003
Job Recognition	0.018	0.026	-0.034	0.069	0.016	0.67	0.503
Organizational Efficiency	0.038	0.027	-0.016	0.092	0.019	1.38	0.168
Importance of Protections	-0.044	0.024	-0.092	0.004	-0.032	-1.811	0.07
Fear of Reprisal	-0.077	0.026	-0.128	-0.027	-0.073	-3.000	0.003
Doubts	0.013	0.022	-0.03	0.055	0.008	0.581	0.562
Job Satisfaction	-0.017	0.025	-0.066	0.031	-0.013	-0.706	0.48
Leadership Satisfaction	0.027	0.018	-0.009	0.062	0.016	1.483	0.138
Job Barriers	0.026	0.023	-0.02	0.072	0.017	1.114	0.266
Job Benefits	0.121	0.026	0.07	0.172	0.081	4.681	< 0.001
Loyalty	-0.239	0.03	-0.299	-0.179	-0.189	-7.866	< 0.001
Concern for Others	0.176	0.031	0.115	0.237	0.122	5.731	< 0.001

Table 5
Binary Logistic Regression Analysis predicting actual whistleblowing behavior.

Predictors	B	SE B	Wald	p	Exp(β)	95% CI	
						Lower	Upper
Organizational Fairness	0.121	0.049	2.439	0.015	1.129	1.033	1.225
WB Education	-0.001	0.040	-0.027	0.978	0.999	0.921	1.077
WB Agency Understanding	0.147	0.052	2.815	0.005	1.158	1.056	1.260
Job Recognition	-0.045	0.052	-0.877	0.381	0.956	0.854	1.058
Organizational Efficiency	-0.089	0.057	-1.575	0.115	0.915	0.803	1.027
Importance of Protections	-0.166	0.054	-3.060	0.002	0.847	0.741	0.953
Fear of Reprisal	0.004	0.054	0.082	0.934	1.004	0.898	1.110
Doubts	-0.183	0.044	-4.188	< 0.001	0.833	0.747	0.919
Job Satisfaction	0.066	0.053	1.242	0.214	1.068	0.964	1.172
Leadership Satisfaction	-0.022	0.039	-0.560	0.576	0.978	0.902	1.055
Job Barriers	0.104	0.044	2.357	0.019	1.110	1.023	1.196
Job Benefits	0.045	0.061	0.748	0.455	1.046	0.926	1.166
Loyalty	-0.127	0.061	-2.077	0.038	0.881	0.761	1.000
Concern for Others	0.280	0.064	4.382	< 0.001	1.323	1.198	1.449

Analysis 6, we explored the inclusion of an interaction term between Organizational Fairness and Concern for Others, but adding this interaction term did not significantly improve the regression model over and above the main effects (comparison $p = .985$).

2.2.3. Internal versus external whistleblowing

We conducted another binary logistic regression predicting whether someone used internal versus external channels for blowing the whistle. In contrast to the factors predicting decisions of whether or not to blow the whistle in the first place, organizational factors had a strong effect on the channels that employees used to blow the whistle. Organizational Fairness had the largest effect on utilizing internal versus external channels to blow the whistle (Table 6). Specifically, the odds of using internal channels for blowing the whistle (as opposed to external channels) increases by 1.168 times for each 1-unit increase in how fair participants perceive their organization to be. Whistleblowing Education was also significantly associated with the use of internal over external channels. Despite previous conceptualizations of external whistleblowing as antisocial, we did not observe any significant relationships between the importance of either awards and bonuses (Job Benefits) or moral concerns and the use of external channels for whistleblowing. If anything, higher ratings on the Concern for Others factor were directionally associated with a greater likelihood of using external channels for blowing the whistle, though this effect was not significant ($p = .177$).

In sum, while organizational factors played a strong role in how people decided to blow the whistle, analyses of the large cross-sectional Merit Principles Survey dataset revealed strong relationships between

moral concerns and decisions of whether or not to blow the whistle in the first place (measured as both prospective intentions and retrospective behavior). In line with our hypotheses, concerns about appearing disloyal predicted a lower likelihood of blowing the whistle, while concerns about the rights and well-being of people beyond their ingroup predicted a greater likelihood of blowing the whistle. While this work complements earlier experimental work on how moral tradeoffs predict whistleblowing (Waytz et al., 2013), a limitation of the current design stems from the retrospective nature of the survey. Specifically, participants who knew they were taking a survey about whistleblowing and other prohibited personnel practices reported on their behavior that previously occurred sometime in the past year. One explanation for the observed relationship between moral concerns and whistleblowing could thus be that participants were answering in a more socially desirable manner in order to justify or rationalize their decision of whether or not to blow the whistle. Study 2 seeks to address some of the limitations of Study 1's design.

3. Study 2

In Study 2, participants answered a condensed list of questions covering all factors used to predict whistleblowing in Study 1. Crucially, in order to address concerns about post-hoc justification in the previous study, participants did not know they would be answering questions about whistleblowing ahead of time and responded to the questions for all factors (in randomized order) before indicating their willingness to blow the whistle. All procedures were pre-registered on AsPredicted.org (accessible at: <http://aspredicted.org/blind.php?x=>

Table 6
Binary Logistic Regression Analysis predicting the use of internal versus external channels when blowing the whistle.

Predictors	Beta	SE B	Wald	p	Exp(B)	95% CI	
						Lower	Upper
Organizational Fairness	0.155	0.076	2.032	0.043	1.168	1.019	1.317
WB Education	0.112	0.046	2.441	0.015	1.119	1.028	1.209
WB Agency Understanding	-0.121	0.069	-1.744	0.082	0.886	0.751	1.021
Job Recognition	0.084	0.078	1.075	0.283	1.088	0.935	1.241
Organizational Efficiency	-0.140	0.077	-1.832	0.068	0.869	0.718	1.020
Importance of Protections	0.065	0.073	0.881	0.379	1.067	0.924	1.210
Fear of Reprisal	-0.097	0.068	-1.423	0.156	0.908	0.774	1.041
Doubts	0.008	0.07	0.119	0.905	1.008	0.871	1.145
Job Satisfaction	0.095	0.078	1.213	0.226	1.100	0.947	1.253
Leadership Satisfaction	-0.030	0.055	-0.554	0.58	0.970	0.863	1.078
Job Barriers	-0.044	0.077	-0.578	0.563	0.957	0.806	1.108
Job Benefits	-0.009	0.106	-0.089	0.929	0.991	0.783	1.199
Loyalty	0.049	0.082	0.596	0.552	1.050	0.890	1.211
Concern for Others	-0.129	0.096	-1.352	0.177	0.879	0.691	1.067

68sx83). As in Study 1, we hypothesized that moral concerns would again be strongly associated with whistleblowing decisions even when including a wide range of other possible predictors (e.g., organizational and situational factors).

3.1. Participants

One hundred fifty workers participated via Amazon.com's Mechanical Turk ($M_{age} = 37.01$, $SD_{age} = 11.32$; 39.33% female) in exchange for a small payment. We used TurkPrime's screening tools (Litman, Robinson, & Abberbock, 2017) to recruit only participants who are currently employed (full time: $N = 133$ or 88.7%; part-time: $N = 10$ or 6.7%; self-employed: $N = 7$ or 4.7%) and would thus have experience in organizational settings where wrongdoing and whistleblowing might occur. The jobs participants held were fairly spread across job categories with larger percentages in Information Technology (18.7%), Marketing, Sales, & Service (11.3%), and Finance (9.3%). Participants in our sample had been working at their current job for 8.25 years on average ($SD = 7.78$).

3.2. Method

Participants consented to a "workplace survey" in which they would be asked a series of questions about their job and the organization they work for. They were instructed to keep their current workplace in mind when answering all questions. After answering questions about their employment status, participants responded to 1 representative item from each factor identified in Study 1 using 7-point Likert scales (see

Table 7
Results of a linear regression predicting hypothetical whistleblowing intentions from each factor in Study 2.

Predictors	B	SE B	95% CI		β	t	p
			Lower	Upper			
Organizational Fairness	0.108	0.101	-0.091	0.307	0.124	1.070	0.286
WB Education	-0.004	0.080	-0.161	0.153	-0.005	-0.052	0.958
WB Agency Understanding	0.092	0.086	-0.078	0.263	0.091	1.071	0.286
Job Recognition	0.072	0.111	-0.147	0.291	0.082	0.649	0.517
Organizational Efficiency	-0.022	0.100	-0.220	0.177	-0.024	-0.217	0.829
Importance of Protections	-0.060	0.074	-0.206	0.086	-0.087	-0.818	0.415
Fear of Reprisal	0.088	0.076	-0.063	0.239	0.133	1.158	0.249
Doubts	0.079	0.065	-0.050	0.207	0.109	1.213	0.227
Job Satisfaction	0.119	0.122	-0.123	0.360	0.138	0.974	0.332
Leadership Satisfaction	-0.100	0.107	-0.312	0.111	-0.113	-0.937	0.350
Job Barriers	0.024	0.065	-0.104	0.153	0.031	0.371	0.711
Job Benefits	0.079	0.084	-0.088	0.246	0.077	0.934	0.352
Loyalty	-0.281	0.074	-0.428	-0.135	-0.409	-3.801	< 0.001
Concern for Others	0.240	0.076	0.091	0.390	0.289	3.176	0.002

Table S5 in Supplementary material for the full list of items). The order of all factor items was randomized across participants.

On a subsequent screen, participants were asked a hypothetical whistleblowing question as in Study 1. Specifically, they were asked to imagine that they observed unethical behavior at their workplace and to report how likely they would be to blow the whistle (report the wrongdoing) when the wrongdoer was 1 of 4 targets: a coworker, their supervisor, a higher-level supervisor, or a contractor or other appointee working in their organization (on a 7-point scale from not extremely unlikely to extremely likely). As in Study 1, we created a single measure of hypothetical whistleblowing by averaging responses to the 4 targets ($\alpha = 0.83$; though see Table S6 in Supplementary material for analyses of each target separately). Importantly, participants were not aware that they would be asked about whistleblowing and they responded to this question after responding to all factor items.

Finally, participants were asked to indicate how important they think each factor item would be in predicting whether or not someone at their organization would decide to blow the whistle. The items were again presented in random order and rated on a 7-point scale from not at all important to extremely important.

3.3. Results and discussion

We entered all 14 factor items simultaneously in a regression predicting hypothetical whistleblowing. This analysis had 80% power to detect a small to medium effect size of $f^2 = 0.14$ at $\alpha = 0.05$. Concern for Others strongly predicted a greater likelihood of blowing the whistle ($B = 0.240$, $p = .002$) while Loyalty had the opposite relationship

($B = -0.281, p < .001$; see Table 7). Consistent with Study 1, Loyalty and Concern for Others have standardized coefficients with the largest absolute value and explain the greatest amount of unique variance in the regression model. Strikingly, the two moral concerns emerged as the only significant predictors of hypothetical whistleblowing demonstrating the consistency of these effects across participant populations (e.g., federal employees and the U.S. workforce more generally). We also explored how demographic factors impacted the observed effects. Age, gender, employment status, job category, and years employed were all unassociated with likelihood of blowing the whistle and adding these demographic factors in a second step of the regression did not improve the model ($p = .581$).³

People's explicit ratings of how important they believe each factor would be in predicting someone's willingness to blow the whistle showed a much different pattern. Concern for Others and Loyalty were both judged as less important for predicting whistleblowing decisions than most of the other factors. Ordinarily, Concern for Others was the 9th most important factor and Loyalty was the 11th (out of 14) and neither were judged to be significantly more important than the least important factor, Organizational Efficiency (Concern for Others: $t(149) = 1.944, p = .054, d = 0.159$; Loyalty: $t(149) = 1.427, p = .156, d = 0.117$). Instead, many organizational factors were rated as the most important predictors of whistleblowing. Protection from Reprisal, Fear of Reprisal, and Organizational Fairness were rated as more important than all other factors ($t(149) > 2.70$, all p 's < 0.008). Supervisor Satisfaction and WB Education were also rated as significantly more important than both moral factors (all p 's $< 0.044, d$'s > 0.166). Thus, participants underestimated the extent to which moral factors predict willingness to blow the whistle in hypothetical scenarios.

4. General discussion

The current investigation provides important evidence of the strong association between moral concerns and whistleblowing. It addresses several key gaps in our current understanding of the psychology of whistleblowers by investigating how a wide range of factors influence real whistleblowing behavior at a large scale. First, we show that moral concerns were consistent predictors of whistleblowing decisions across contexts: for government employees as well as the workforce more generally, and for reports of hypothetical intentions and past behavior. The greater people's concern for loyalty, the less likely they were to blow the whistle; the greater people's concern for the well-being of the wider public, the more likely they were to blow the whistle. Second, across studies and analyses, moral concerns predicted whistleblowing above and beyond other factors that often receive more focus in explaining whistleblowing, such as people's perceptions of their organization, situational concerns, or the extent to which they feel engaged and motivated at their job (Cassemetis & Wortley, 2013; Mesmer-Magnus & Viswesvaran, 2005; Near & Miceli, 2008). Together, these findings reveal important psychological motivations underlying whistleblowing and highlight the power of moral concerns in these decisions.

While the cross-sectional data used in Study 1 allowed us to investigate how a wide range of factors predict whistleblowing in a large real-world sample, it does not allow us to make causal claims about the role of moral concerns in whistleblowing. Nevertheless, the current findings are consistent with prior work showing that whistleblowing decisions can be altered by manipulating people's attention to particular moral values. In one study, priming loyalty to one's group made group members express greater intentions to blow the whistle on

unethical behavior (Hildreth et al., 2016); however, in other work, priming participants to endorse fairness over loyalty increased people's willingness to blow the whistle on unethical behavior in an online marketplace (Waytz et al., 2013). We note that Concern for Others, as measured by the items included in the MSPB survey, is operationalized differently from this previous work on fairness, yet shares at least one critical feature: they both represent individualizing values (Graham et al., 2009; Graham et al., 2011), which involve extending concern for the rights and well-being of individuals beyond one's immediate ingroup. The current large-scale investigation thus supports the conclusion that, when whistleblowers are forced to make tradeoffs between concerns for their group and concerns for people more generally, concern about loyalty inhibits whistleblowing, whereas concern about those outside one's group promotes whistleblowing.

Though moral concerns were strongly associated with whether or not someone decided to blow the whistle in the first place, they were not associated with *how* people decided to blow the whistle (i.e., through internal vs. external channels). While whistleblowers may be condemned by people affected by their actions, particularly ingroup members, our results do not suggest that whistleblowers using external versus internal channels actually have more antisocial motivations (Barnett & Salomon, 2012; Miceli & Near, 1997). If anything, higher ratings on the Concern for Others factor were directionally associated with a greater likelihood of using external channels for blowing the whistle. In contrast to the null effect of moral concerns on how people decide to blow the whistle, the organization played a critical role in this stage of the whistleblowing process. People who felt their organization educated them more about their rights as whistleblowers and who perceived their organization as fairer were more likely to use internal channels for blowing the whistle. Importantly, the benefits of whistleblowing are not limited to the broader public beyond the whistleblower's organization, as companies with more active whistleblowing systems are more profitable and face fewer lawsuits (Stubben & Welch, 2018; Cf. Trevino & Nelson, 2016). These findings should be useful to organizations that seek to promote whistleblowing internally.

Despite our emphasis on two specific moral concerns, loyalty and fairness may be representative of broader evolutionary solutions for fostering cooperation between people. Individualizing foundations such as harm and fairness function to protect the rights and well-being of individuals, while binding foundations such as loyalty function to strengthen collectives by emphasizing the responsibilities and duties that individuals have to their ingroup (Graham et al., 2009; Graham et al., 2011). Interestingly, individuals in cultures that place greater value on binding foundations (Buchtel et al., 2015; Haidt, Koller, & Dias, 1993; Vaclair & Fischer, 2011) express more negative feelings toward whistleblowing than individuals from America, a relatively more individualistic culture (Brody, Coulter, & Lin, 1999; Brody, Coulter, & Mihalek, 1998; Chiu, 2003). Combined with the current results, individualizing values may promote willingness to blow the whistle, particularly when contrasted against binding values.

The current results may ultimately provide inspiration for novel ways of encouraging whistleblowing. Previous research has primarily modeled whistleblowing decisions as cost-benefit calculations (Cassemetis & Wortley, 2013; Gundlach et al., 2003; Henik, 2008; Miceli et al., 2012), so it is unsurprising that recommendations for increasing whistleblowing often focus on diminishing the costs or increasing the benefits of speaking up; for example, by increasing the financial incentives available to whistleblowers (Dyck et al., 2010). Along these lines, the Executive Director of the National Whistleblower Center recently stated that, "If your white-collar crime detection program is based on nice people having high moral values, corruption will flourish...you'll never catch it" (Schechter, 2017). However, as suggested by the predictions results in Study 2, people may be suffering from an extrinsic incentive bias (Heath, 1999) by underestimating the power that moral concerns have in driving whistleblowing decisions. Even highly polarized attitudes can be manipulated by appeals to

³ Simply excluding the 7 self-employed participants from the sample also does not change our key results – whistleblowing was predicted by both Concern for Others ($B = 0.236, SE = 0.0782, p = .003$) and Loyalty ($B = -0.272, SE = 0.075, p < .001$) and no other factors were significant (all p 's > 0.192).

different moral concerns (Feinberg & Willer, 2013). In the present context, organizations could promote discussion of the conflicts that might arise between loyalty and fairness when attempting to balance concerns for one's family, coworkers, boss, organization, and community. By situating an employee's responsibilities within a larger sense of moral responsibility to society at large (Rorty, 2005), people may come to accept whistleblowing as an expression of both loyalty and fairness.

In conclusion, the current work supports conceptualizations of whistleblowing as an important example of moral courage. The strong association between moral concerns and whistleblowing decisions suggests that people blow the whistle despite the risk of personal costs in order to uphold moral principles or values (Lopez et al., 2003; Osswald et al., 2010; Sekerka & Bagozzi, 2007; Skitka, 2012). Indeed, just as concern for the well-being of others predicted a greater likelihood of blowing the whistle in the current studies, justice sensitivity and concern for the disadvantage predicted other examples of moral courage in laboratory contexts, for example, intervening in the (staged) theft of a person's phone (Baumert et al., 2013). Importantly, the dichotomy between loyalty to one's group and extending concern to others evident in the current data on whistleblowing decisions also lies at the heart of many key moral issues beyond the domain of whistleblowing. Over-prioritizing ingroup concerns relative to the needs of others beyond the group may similarly act as a barrier to fostering equality and cooperation across individuals (Napier & Lugini, 2013), diminishing intergroup conflict (Cohen, Montoya, & Insko, 2006), extending empathy to outgroups (Cikara, Bruneau, & Saxe, 2011), and widening the moral circle (Singer, 2011). Understanding how whistleblowers are willing and able to set aside group obligations, risking personal well-being and safety for the sake of treating others fairly, will thus aid the larger goal of building moral courage and fostering prosocial behavior more generally.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jesp.2019.103848>.

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