

# Subordinates as the First Line of Defense against Biased Financial Reporting

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**ABSTRACT:** Managers who generate financial reports often rely on subordinates who possess private information to provide inputs. When managers have incentives to manipulate reports, they may request biased inputs from subordinates. However, subordinates can act as informal controls and constrain managers' opportunism. We experimentally examine two potential determinants of subordinates' willingness to serve as informal controls: their perception of the subordinate-manager relationship quality and their beliefs about the ethical nature of the task. Subordinates who perceive a high-quality relationship with their manager provide more bias, despite a compensation scheme that makes compliance costly. This result suggests that managers who cultivate close working relationships with subordinates may undermine the control system. Subordinates' beliefs about the ethical nature of the task also reduce compliance, but more so when the manager requests income-increasing estimates. Our findings contribute to the management accounting literature by providing insights into the role of subordinate employees as informal controls.

**Keywords:** relationship quality; informal control systems; reporting bias; bounded ethicality.

## INTRODUCTION

Managers are responsible for generating internal and external financial reports (e.g., budgets, financial statements, and performance reports). However, they often rely on subordinate employees to provide the inputs or estimates for these reports. When managers have incentives to manipulate these financial reports, they may (implicitly or explicitly)

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request biased inputs. Subordinates, in their decision of whether to comply with a manager's request for biased inputs, can be a preventative control or constraint on managers' opportunism.<sup>1</sup>

We identify two determinants of a subordinate employee's compliance decision: the perceived quality of the manager-subordinate relationship and the subordinate's beliefs about the ethical nature of the estimation task. To study the effects of perceived relationship quality, we draw upon the leader-member-exchange (LMX) literature. LMX theory and research provide a relative measure of a subordinate's alignment and social connection with a manager (Graen and Uhl-Bien 1995). "Relationship quality" primarily relates to the social connection between a manager and a subordinate (e.g., perceiving the manager as fun, liking the manager as a person, considering the manager a friend). Existing studies have documented consistent positive effects of higher quality relationships, including greater loyalty to the manager (Scandura and Graen 1984) and increased effort to achieve the manager's goals (Vance 2010).

While higher quality relationships have positive effects in many organizational settings (Graen and Uhl-Bien 1995), we argue that if the interests of the manager and the firm are not aligned (i.e., the manager benefits from a biased accounting estimate but shareholders do not), a higher quality relationship can negatively affect the firm through the employee's compliance with the manager's desires. That is, the more a subordinate likes, trusts, and feels connected to her manager, the more likely she will act in accordance with the preferences of that manager—whether good or bad for shareholders. As a result, we expect subordinates who perceive high-quality relationships with their manager to comply with the manager's preference for biased accounting estimates to a greater degree than subordinates who perceive low-quality relationships.

We also consider whether subordinates' behavior will differ based on their beliefs about the ethical nature of providing accounting estimates, and whether this behavior varies with the direction of bias requested. Prior accounting research generally shows that individuals consider biased reporting to be unethical on average (Kaplan et al. 2007; Stevens 2002). However, given the relative acceptance of conservative rather than aggressive accounting choices (Ashbaugh et al. 2003), we expect that a request for an income-increasing estimate will trigger more ethical concerns than a corresponding request for an income-decreasing estimate (Butterfield et al. 2000; Trevino 1986). As a result, a subordinate's ethical concerns are more likely to mitigate the tendency to bias estimates in response to income-increasing requests. For income-decreasing requests, the relative absence of an ethical component (i.e., greater acceptability of conservatism) should result in perceived relationship quality having the dominant effect on the amount of bias in the accounting estimate.

To test our hypotheses, we create an experimental setting in which subordinates are asked by a real, but anonymous, manager to provide bad debt estimates. With the full understanding and agreement of the participant manager, the type of estimate requested of the subordinate is randomly manipulated within subjects at three levels: accurate, income-increasing, or income-decreasing. The subordinates have private information relevant to their estimate and have discretion over the degree to which they comply with the manager's requests. The manager is unable to detect the degree of compliance. We use a compensation contract that motivates subordinates to exert a reasonable level of effort and to provide an accurate estimate. As a result, complying with the manager's request for bias reduces participants' expected income (i.e., they potentially bear a direct cost for submitting a biased estimate to their manager). We manipulate relationship quality between subjects through the provision of information to subordinates about two anonymous (but real) managers. Subordinates in the high- (low-) quality relationship condition receive information indicating the manager is collaborative (authoritative) and is a student from within (outside) the accounting program in which they are enrolled. The managers' described style (authoritative or collaborative) is based on their

<sup>1</sup> We assume that bias in financial reports is undesirable from the perspective of the firm's owners (e.g., Gunny 2010).

actual responses to a questionnaire administered in the first phase of the study. We measure subordinates' beliefs about the ethical nature of the accounting estimates task by having them rank six choices as to task type: ethical, financial, business, managerial, strategic, and accounting. We use a median split of the rankings to categorize subordinates as having "high" or "low" beliefs about the accounting estimates task being ethical in nature.

As predicted, we find that subordinates provide estimates that are more biased in the direction of their managers' preference when (1) they perceive a greater connection with that manager (higher perceived relationship quality), and (2) do not believe the task has an ethical dimension. Also as predicted, we find that beliefs about the task's ethical nature significantly mitigate the tendency to provide biased income-increasing estimates.

By focusing on subordinates' perceptions of their manager, our study makes several contributions to research examining controls related to the performance reporting process. First, although employees have been identified as important elements of the control environment (Simons 1995), very little research has examined the extent to which they will act in that capacity. We build on Vance (2010), who examines the effects of relationship quality on subordinate behavior when a manager desires *accurate* reporting. Our findings demonstrate that the perceived quality of a subordinate's connection with her manager has a significant influence on that subordinate's willingness to comply with the manager's requests for *biased* accounting estimates. To the extent that biased reporting represents a form of dishonesty, we also contribute more generally to the growing stream of research that has examined when and why individuals report honestly when doing so may *not* be in their economic interests (e.g., Evans et al. 2001; Rankin et al. 2008; Zhang 2008; Tayler and Bloomfield 2011). Our setting is distinct from these studies in that we incentivized individuals to report honestly and focus on non-pecuniary factors (relationship quality, ethicality perceptions) that either counteract or reinforce the incentive effects.

Second, our results contribute to the corporate governance literature by suggesting that organizations characterized by close working relationships between subordinates and managers may have a heightened risk of misreporting both internally and externally, unless there are counter-acting controls in place. While we do not interpret our findings as suggesting that organizations should cultivate low-quality relationships, we document an important setting in which closer relationships can result in weaker controls over manager opportunism, and potentially significant negative outcomes for the firm. Finally, while ethical concerns have been shown to matter in other accounting settings (e.g., Stevens 2002), our research contributes to the management control literature by demonstrating that beliefs about the ethical nature of generating accounting estimates vary, even among participants with similar education and work experience, and that those perceptions may be instrumental in constraining managerial opportunism.

In the next section we develop our hypotheses by drawing on the leader-member-exchange literature. The third section presents the method we employ to test our hypotheses. The fourth section contains our findings, and the last section concludes.

## THEORY AND HYPOTHESIS DEVELOPMENT

While directors and auditors help control manager opportunism, we argue that subordinate employees can also serve as an informal control mechanism (Bartlett and Ghoshal 1995; Lindsay et al. 1996; Simons 1995).<sup>2</sup> At one extreme, employee whistle-blowing or the threat of

<sup>2</sup> We acknowledge that control systems consist of both preventative and detective controls (Anthony and Govindarajan 2007). Moreover, detective controls such as audits (internal or external) can also be effective in reducing bias in financial reports. However, it is beyond the scope of our paper to address the potential interaction between preventative controls such as employee resistance with other elements of the overall control system, such as detective controls.

whistle-blowing provides a control mechanism that can deter opportunism (see Bowen et al. 2010; Dozier and Miceli 1985; Gundiach et al. 2003). A less extreme and more timely way for employees to control manager behavior is to resist manager requests for bias in financial reports. Resistance represents a more subtle control mechanism and has the advantage of being preventative rather than “after the fact.” In this sense, employees can serve as the first line of defense against managerial misreporting. We propose that important determinants of the subordinate’s decision to act as this type of control are the subordinate’s perceptions of the quality of the manager-subordinate relationship and the ethical implications of the task.

### Leader-Member-Exchange (LMX)

We draw upon the leader-member exchange (LMX) literature to develop predictions about subordinate behavior as a function of perceived relationship quality with the manager. LMX is a well-established theoretical construct found to significantly affect subordinate employee behavior in various settings (see Graen and Uhl-Bien 1995). LMX is commonly assessed by the summed responses to a set of questions that place subordinate employees along a spectrum anchored by low- and high- quality relationships with their manager (Liden and Maslyn 1998). In the LMX literature, the quality of the relationship is heavily predicated on the strength of the social connection between managers and their subordinates. Quality relates to interpersonal factors such as the extent to which managers and subordinates like each other, enjoy working together, and trust each other to act in their best interests (Liden and Maslyn 1998). Low-quality relationships are characterized by employment settings where subordinates are unable to influence their manager, operate in narrow role-defined relationships, and do not have positive social relationships with the manager (Duchon et al. 1986; Liden and Maslyn 1998). Subordinates in low-quality relationships perform their explicitly defined tasks and responsibilities, but offer little extra (Brower et al. 2000).

Conversely, a high-quality relationship is characterized by reciprocal influence, mutual trust, respect and liking (Liden and Maslyn 1998). Subordinates in high-quality relationships are also expected to be more committed to their manager’s goals and more willing to expend extra effort to achieve those goals (Brower et al. 2000). The positive effects of high-quality relationships within a firm have been consistently empirically documented. Higher relationship quality has been linked to reduced turnover (Graen et al. 1982), increased job satisfaction (Stepina et al. 1991), loyalty (Scandura and Graen 1984), and performance (Legace 1990; Dunegan et al. 1992). We are unaware of *any* research showing a *negative* impact of high-quality relationships between managers and subordinates. The broad conclusion from the management literature is that higher relationship quality is desirable and beneficial (Graen and Uhl-Bien 1995).

### The Effects of Perceived Relationship Quality on Subordinate’s Estimates

A subordinate in a high-quality relationship is motivated to achieve the manager’s goals. Obviously, this is beneficial when the manager’s goals are aligned with those of the firm and its shareholders. However, the LMX literature also leads us to expect that, all else equal, the same subordinate would pursue the manager’s goals even when the manager’s interests are misaligned with the organization and its shareholders. Thus, we posit that the perceived quality of the subordinate’s relationship with her manager can influence behavior in ways that are not always desirable from the organization’s perspective. We develop our hypotheses in a setting where subordinates have private information and discretion over the extent to which they comply with the managers’ requests for bias in an accounting estimate.

In our setting, the manager requests an accounting estimate (bad debts expense) that is accurate, income-increasing, or income-decreasing.<sup>3</sup> An accurate estimate is represented by the most likely value of the bad debts expense (based on the employee's informed analysis). An income-increasing (decreasing) estimate is represented by a bad debts value that is below (above) the most likely estimate. We define a biased estimate as one that is above or below the most likely value for bad debts expense and generally assume that bias is undesirable when generating accounting estimates. Importantly, while we acknowledge that settings exist in which a manager can readily detect compliance, we focus on a setting where detection is difficult for a manager. The manager does not know the information considered (or ignored) by the subordinate and *ex post* comparisons of actual results with *ex ante* estimates are therefore not fully revealing given the uncertainty inherent in accounting estimates. Thus, there is limited opportunity for the manager to justify inflicting punishment (e.g., demotion, employment termination) for non-compliance. We deliberately chose this setting because it allows us to isolate the effects of perceived relationship quality on the extent of subordinates' compliance with requests for biased information independent from those that would arise from fear of punishment or reprisal, which is a different construct.

We expect that the higher the perceived relationship quality, the more likely subordinates will comply with their managers' requests for biased accounting estimates. Specifically, we predict that:

**H1:** Subordinates who perceive higher quality relationships with their manager will provide more biased accounting estimates than subordinates who perceive lower quality relationships.

There are at least two reasons why our predicted effect may not be observed. First, the LMX literature demonstrates that there is greater reciprocal influence in higher-quality relationships (Liden and Maslyn 1998). The lower hierarchical barriers that arise in higher-quality relationships allow subordinates to feel free to express their views and assert their perspective. In our setting, this could manifest as resistance (i.e., less biased estimates) to what may be perceived as an inappropriate request from the manager. Second, as described in the next section, if an individual sees this task as generally ethical in nature, there may be little room for relationship-based effects to emerge. Evans et al. (2001) demonstrate in an experiment that preferences for wealth and honesty affect managerial reporting. Their participants, acting as managers, gave up some wealth to report honestly. We predict that participants, acting as subordinates, will give up wealth to report dishonestly when requested to do so by a manager that they like and respect.

### Subordinate's Beliefs about the Ethics of the Task and Their Estimates

Research on ethical decision-making and moral awareness in organizations indicates that both situational (e.g., manager behavior and attitudes, corporate culture) and individual-level factors (e.g., moral reasoning) influence the extent to which an issue is perceived as having an ethical dimension (Butterfield et al. 2000; Jones 1991; Trevino 1986); however, little research to date has examined the role of ethical beliefs in a control setting. In this section we develop a hypothesis regarding the overall expected effects of ethical perceptions on compliance in our setting. In the following section, we consider the interactive effects of ethical perceptions and the type of bias (income-increasing versus -decreasing) requested by the manager.

An area of research that proposes "bounded ethicality" as an extension of bounded rationality is pertinent here (Chugh et al. 2005). The basic idea is that the computational bounds on human

<sup>3</sup> While we employ a financial reporting task, using alternative tasks also requiring use of managerial discretion (i.e., development of budget estimates, estimating the useful life of production equipment) would result in equivalent predictions.

cognition can influence the quality of ethical judgments. One consequence of bounded ethicality is the limitation in recognizing the ethical challenges inherent in a situation or a decision. Chugh et al. (2005) argue that most individuals view themselves as moral, competent, and deserving, and that this view obstructs their ability to recognize conflicts of interest or ethical dilemmas when they occur. The authors do not challenge the individual's capacity to recognize such conflicts in the abstract, or in situations involving others, but rather in situations involving the self. Because individuals tend to view their immunity from ethical challenges as more powerful than the situation (i.e., they are moral and competent), and any gains garnered as appropriate (i.e., they are competent and deserving), they are less able to recognize or address ethical challenges they encounter. Ironically, a strong or persistent view of one's own ethicality can lead to less than ethical decisions. Finally, when ethical dilemmas are less "visible" and can be construed as opportunities or even obligations to demonstrate loyalty or generosity or support, they are less likely to be recognized as conflicts or as presenting ethical dilemmas. In essence, from this perspective, unethical behavior occurs, not because people are immoral, but rather because they do not see the "ethical" dimension of the decision (Tenbrunsel 2005).

In our context, we expect that subordinates will vary in the degree to which they believe generating an accounting estimate (of any type) is ethical in nature. Some will believe that the task is simply an accounting or financial reporting duty (i.e., a mechanical process to be completed as directed), while others will believe that there is a social or moral obligation to provide unbiased numbers (Butterfield et al. 2000). Stevens (2002) provides support for this premise; participants in an experiment agreed that generating budgetary slack (i.e., a biased budget) was relatively unethical. Further, the stronger participants' agreement that creating a biased budget was unethical, the lower the amount of budget slack they created. Davis et al. (2006) report similar results. However, in both studies there was considerable variance on these measures indicating that individuals vary in their perceptions of the ethics of these tasks. Based on this literature, we predict that:

- H2:** Subordinates who believe generating an accounting estimate is relatively more ethical in nature will provide less biased estimates than their counterparts who believe it is relatively less ethical in nature.

### The Impact of the Direction of Requested Bias on Subordinate's Estimates

We have identified two potential determinants of the bias in accounting estimates: the perceived relationship quality between subordinates and managers, and subordinates' beliefs about the ethics of the accounting estimate task. To this point, our implicit assumption has been that income-increasing and income-decreasing biases are equivalent and similarly perceived by the subordinate. In this section we argue that the effects of perceived relationship quality and beliefs about task ethics on the bias created by subordinates will differ depending upon whether the manager asks for income-increasing or income-decreasing estimates (i.e., the direction of the bias requested is a moderating factor).

Accounting conservatism can be defined as "anticipate no profit, but anticipate all losses" (Watts 2003). Basu (1997) contends that this perspective has influenced accounting for more than 500 years. Users of financial statements tend to be less concerned with conservative accounting.<sup>4</sup> Instead, users tend to be more concerned with aggressive (i.e., income-increasing) accounting

<sup>4</sup> For example, several Wall Street analysts downplayed the importance of the SEC's investigation of Microsoft. "If the SEC wants to force Microsoft to be less conservative, Wall Street will just increase earnings projections of the company" (*Wall Street Journal* 1999a). "Microsoft has demonstrated a consistent history of conservative accounting. I can't get at this point get too excited about this" (*Wall Street Journal* 1999b).

choices (Ashbaugh et al. 2003; Becker et al. 2003). This asymmetric response may stem from the belief that investors are potentially harmed more by aggressive than by conservative accounting because investors are more likely to invest based on more favorable results or projections. The apparent distaste for income-increasing (i.e., aggressive) accounting choices has implications for our setting.

Given the greater acceptability of conservative accounting, we argue that ethical concerns will be greater when accounting estimates have the potential to increase income. In other words, ethical concerns about accounting estimates are largely concerns about *aggressive accounting*. Therefore, subordinates' compliance with a request for income-increasing bias is more likely to be influenced by their beliefs about the ethics of the task. We predict the following interaction between bias direction and ethical perceptions.

**H3:** Subordinates' beliefs about the ethics of providing accounting estimates will have stronger mitigating effects on their compliance with requests for income-increasing bias than with requests for income-decreasing bias.

The reasoning behind H3 can be extended to predict the effects of perceived relationship quality on behavior when a manager requests income-decreasing bias. Because conservative accounting is generally considered more acceptable than aggressive accounting, we expect that ethical beliefs will have a relatively weak effect on behavior when the manager requests income-decreasing bias. We expect that this will allow subordinates' perceptions of relationship quality to dominate. Conversely, when a manager requests income-increasing bias, the ethical beliefs about the task will become more influential, resulting in weaker effects for relationship quality. Specifically, we predict the following interaction between bias direction and relationship quality:

**H4:** The perceived quality of the relationship between subordinates and their managers will have stronger effects on subordinates' compliance with requests for income-decreasing bias than with requests for income-increasing bias.

## METHOD

### Overview

Fifty-four graduate accounting students from a large university participated in our multi-period experiment using an online instrument. We employ a  $2 \times 2 \times 3$  mixed design. Participants' perceptions of the quality of the relationship with their manager were manipulated between subjects at two levels (low-quality and high-quality). We employ a measured variable (described below) to assess participants' beliefs about the ethics of providing accounting estimates and take a median split to create two levels for this variable (low and high ethicality beliefs). The type of request made by the manager for the accounting estimate was manipulated within subjects at three levels. All participants were asked to provide 30 bad debts estimates: 10 accurate estimates, 10 income-increasing estimates, and 10 income-decreasing estimates. Our two dependent variables are the absolute average percent bias (i.e., average distance of participant's estimates from the most likely value) for income-increasing requests and for income-decreasing requests.

### Independent Variables

#### *Perceived Relationship Quality*

Pre- and post-task we collect responses to a modified version of an established LMX questionnaire, the LMX-MDM, to measure subordinates' *perception* of the manager (Liden and Maslyn 1998). Recall that favorable perceptions of the manager (e.g., trust, liking, and respect)

characterize high-quality relationships. The LMX-MDM instrument measures effect (e.g., personal liking), loyalty (e.g., belief that the manager will defend and support the subordinate), and contribution (e.g., the subordinate's willingness to work hard for the manager). To create a range of responses we used a modified version of the approach developed by Vance (2010). We first administered a survey to students inside and outside the accounting master's program to identify individuals who could serve as one of two manager types. The questions asked about the individual's beliefs regarding effective management approaches; we used the responses to classify individuals as having either an authoritarian or collaborative philosophy (see Appendix A). We then ranked the survey results to identify the individuals with the most collaborative and most authoritarian beliefs. We then contacted the most authoritarian respondent from *outside* the accounting program, and the most collaborative respondent from *within* the accounting program to serve as our two managers. Prior to agreeing to serve as manager, both potential managers were briefed on key aspects of the experiment, including: a general description of who would serve as their subordinates (i.e., accounting graduate students); how subordinate actions affected their payment; and what we would ask subordinates to do on their behalf during the study. The two individuals serving as managers understood these aspects of the experiment and agreed to participate with this understanding.<sup>5</sup> The benefit of this approach is that it allowed us to avoid having to refer to a "hypothetical" manager in the second stage of the experiment (see below) or to create a fictitious managerial style (authoritarian or collaborative) for the two managers. Also, as discussed further below, using managers from inside and outside the accounting program was intended to strengthen our manipulation of perceived relationship quality.

In the second stage of the study, the subordinate participants were informed of their role. Participants logged on to the experiment website where they were randomly assigned to one of the two anonymous (but real) managers. The participants first learned that the manager was either from within the accounting program or from outside the accounting program. Vance (2010) finds that this element alone significantly affects the loyalty dimension of the LMX measure. Because the task used in our experiment is an accounting estimate task, persons from within the accounting masters program may be perceived as more competent or knowledgeable than those outside the program. Crosby et al. (1990) find that perceptions of competence or expertise are significantly related to perceptions of relationship quality in the relationship marketing literature. Manipulation of the remainder of the measure is accomplished via a description of the manager's responses to the earlier survey, allowing subordinates to assess the manager's style (authoritative or collaborative).<sup>6</sup> At no point did the participants know the identity of, or interact with, the manager.

It bears emphasis that we are not interested in management style *per se* or the reasons a particular perception of the manager is developed. While we adopt the terminology typically used in the LMX literature (i.e., high-quality and low-quality), we seek to broadly manipulate subordinates' perceptions of the manager, as measured by our modified LMX instrument. The purpose of selecting extreme management styles was to move subordinates off an indifference point with respect to their manager so that they would be more likely to resonate with, or dislike their manager's style than to be indifferent. While we expected that most participants would generally perceive the relationship quality to be higher when the manager is collaborative and from within the

<sup>5</sup> Given the managers' understanding and agreement regarding the design details and their specific role we did not feel it necessary to frame the requests for bad debt estimates in the instrument as being made "on behalf of the managers." Indeed we worried that employing this type of wording might make our participants suspicious or confuse them.

<sup>6</sup> No additional information is provided about the age or role of the manager. As a result, any assumptions the participant makes regarding age, background, knowledge, or experience of the manager would add noise to our measurements, weakening our manipulation.



accounting program, we did not expect this would necessarily hold for all participants. For example, some participants could prefer a manager with a more authoritarian management style and/or someone from outside the accounting school as their manager.

While we acknowledge that we do not have an actual relationship in this study, attempting to create one in the laboratory can have significant drawbacks. Allowing the manager and subordinate to actually interact could introduce confounding factors (e.g., appearance, gender, prior interactions) compromising internal validity. Also, introducing two-way interactions between participants and the manager could have led some participants to simply view the experiment as a strategic interaction with a fellow student where the objective was to “win” (i.e., always report accurately so as to maximize their own potential earnings). If participants had viewed the experiment this way, it could have overwhelmed the predicted effects of our manipulated (relationship quality) and measured (ethicality beliefs) independent variables. Moreover, we believe potentially inducing a purely “strategic” approach to the task through actual interactions would have low external validity since we believe factors such as relationship quality and ethicality beliefs *do* matter in practice.

As with any design choice, there are limitations to our choice. Relationships are inherently complicated, so the simplification of our approach sacrifices what are likely important components of behavior in this setting (e.g., when the manager will choose to request bias, whether the subordinate tries to shield the manager from unethical decisions, subordinates’ desire to “punish” unethical requests from a manager). However, these are beyond the scope of the present study. We believe our choice to manipulate subordinates’ *perceptions* of the relationship with the manager represents a conservative approach that improves internal (and perhaps external) validity.

To determine whether we successfully elicited the intended variation in manager perceptions, we administered an LMX questionnaire to our participants (see Appendix A for the questionnaire) immediately after they learned about the manager’s style but before providing any details regarding the task they were about to perform (e.g., types of bias that would be requested, number of periods that would be used). Participants responded to nine questions, on a  $-3$  to  $+3$  scale, anchored by “Strongly Disagree” and “Strongly Agree.”<sup>7</sup> Many of these questions regarding the perceptions of the manager are forward looking in that they relate to what the participant *expects* that manager to do in the future. As a result, we believe they are predictive of the relationship quality that would emerge, given a manager of a particular type.

We use factor analysis to derive our measure of perceived relationship quality. The results of the analysis (not tabulated) show that six of the nine questions (1, 2, 3, 5, 7, and 8) load as a single factor, explaining approximately 57 percent of the variance in the underlying items included in the overall measure.<sup>8</sup> Scale reliability for the six items is high with Cronbach’s alpha of 0.90 (Stevens 1996). Accordingly, we average the responses for these six items to create a single measure of perceived relationship quality for each participant, which can vary from  $-3$  to  $+3$  (Graen and Uhl-Bien 1995).<sup>9</sup> We evaluate the success of our manipulation using this continuous measure of relationship quality.

<sup>7</sup> The questions have been validated in the management literature as measures of relationship quality (Liden and Maslyn 1998) and are used extensively in current research (e.g., Atwater and Carmeli 2009; Harris et al. 2009). We also asked the same set of questions immediately after participants had completed the experimental task. Responses do not differ between the pre- and post-task administrations of the LMX questions ( $p = 0.43$ ). Our theoretical framework suggests effects on behavior as a function of *existing* perceptions, so we use the pre-task values. Results are similar using post-task responses or the average of the pre- and post-task responses. We omit three questions that relate to professional respect, as the questions are not applicable to the setting we examine and we do not expect professional respect to be affected by our manipulation of the manager.

<sup>8</sup> All factor loadings are  $> 0.70$  indicating that the six items represent a uni-dimensional construct in our setting (Stevens 1996).

<sup>9</sup> Results using an average of all nine questionnaire items are qualitatively similar to those reported using the six items.

We use a median split of the continuous variable to classify participants as having high and low relationship quality perceptions and compare this classification approach to our manipulated variable. We expected that subordinates assigned a collaborative manager from within their program would have scores above the median (indicating a high-quality relationship) while those assigned an authoritarian manager from outside the program would have scores below the median (indicating a low-quality relationship). This was the case for 80 percent of participants. Predictably however, some individuals have negative feelings about their program and/or classmates, or prefer to work for a more directive manager. Nine participants' responses fit this description. Four participants assigned to the collaborative manager from within the same program had scores on the six-item measure (mean =  $-0.54$ ) that were well below the median ( $0.75$ ), indicating a low-quality perceived relationship. Five participants assigned to the authoritarian manager from outside the program had scores that were well above the median (mean =  $1.40$ ), indicating a high-quality perceived relationship.

Given the results for these nine participants, and because we rely on theory that predicts behavior based on the subordinate's actual perception of the relationship, regardless of *why* that perception exists, we believe it more appropriate to analyze our findings using the median split to classify participants as having a high- or low-quality relationship.<sup>10</sup> Those in the low perceived relationship quality category based on the median split have an average score of  $-0.46$  on the six items while those in the high perceived relationship quality condition have an average score of  $1.55$  (Table 1, Panel A). The difference between means in the low and high groups is significant ( $p < 0.001$ ).

### Beliefs about Task Ethics

To determine participants' beliefs about the ethics implied in our task setting, after completion of the estimation task, we asked them to rank six answers to the question: "What type of task is generating an accounting estimate?" The six randomly presented choices are: ethical, financial, business, managerial, strategic, and accounting. A rank of "1" for "ethical" suggests that estimate generation is believed first and foremost to be an ethical task, while a rank of "6" suggests the absence of an ethical component to the task. As the ethics rank increases (i.e., it is not viewed as an ethical task by participants), bias is expected to increase. We acknowledge that our approach forces participants to prioritize these task dimensions and that participants might consider several of the choices as applying equally. However, we believe that our approach is warranted because ranking forces participants to reveal their beliefs about the relative importance of ethics with respect to this task.<sup>11</sup>

Inspection of the response distribution shown in Panel B of Table 1 indicates a median ranking of 4. As with our measure of perceived relationship quality, we take a median split of this variable for our analysis, maintaining cell balance as much as possible (i.e., rankings  $\leq 4$  are "high" and  $> 4$  are "low," respectively). The high and low categories include 28 and 22 participants respectively. We label this variable *Ethicality*. Panel B, Table 1 also shows the distribution of *Ethicality* rankings separately for the low (*Low RQ*) and high (*High RQ*) relationship quality conditions. Participants' perceptions of the quality of the relationship with their manager do not appear to have influenced their beliefs about the ethicality of the task of generating accounting estimates; in both the *Low RQ* and *High RQ* conditions, 14 participants are classified as *High Ethicality*. Moreover, results of a Chi-square test indicate that the distribution of the *Ethicality* rankings is not significantly associated with relationship quality condition ( $\chi^2 = 7.50$ ,  $p = 0.19$ ).

<sup>10</sup> Results using the continuous LMX measure (not tabulated) are qualitatively similar to those reported based on the median split in Tables 3 and 4. The only substantive difference is that the two-tailed p-value for the *Direction*  $\times$  *Ethicality* interaction used to test H3 (Table 4) increases to 0.14.

<sup>11</sup> When direct questions about ethics were asked in pilot testing, participants tended to give socially acceptable responses with little variation. For example, most agree that providing estimates is an ethical task and it is unethical to provide income-increasing or income-decreasing estimates that are not accurate.

**TABLE 1**  
**Descriptive Statistics**

**Panel A: Results for Relationship Quality (RQ) Measures<sup>a</sup>**

Item <sup>c</sup>	Low RQ (n = 25) <sup>b</sup> Mean (Std. Dev.)	High RQ (n = 25) Mean (Std. Dev.)
1. My manager would be a lot of fun to work with	-1.44 (1.00)	0.96 (0.73)
2. I like my manager as a person	-0.24 (1.05)	1.52 (0.96)
3. My manager is the kind of person I would like to have as a friend	-1.00 (1.00)	1.16 (0.99)
5. My manager would defend me to others in the organization if I made an honest mistake	-0.36 (1.35)	1.88 (0.83)
7. I do not mind working my hardest for my manager	0.36 (1.35)	1.88 (0.72)
8. I am willing to do work for my manager that goes beyond what is specified as my task	-0.08 (1.44)	1.88 (0.60)
Average of Six Items	-0.46 (0.75)	1.55 (0.45)

**Panel B: Response Frequency for Ranking of Task as Ethical in Nature<sup>d</sup>**

Ethicality Rank	All		Low RQ		High RQ	
	Number	Percent	Number	Percent	Number	Percent
1.	1	2.0	1	4.0	0	0.0
2.	6	12.0	2	8.0	4	16.0
3.	13	26.0	5	20.0	8	32.0
4.	8	16.0	6	24.0	2	8.0
Total High	28	56.0	14	56.0	14	56.0
5.	8	16.0	6	24.0	2	8.0
6.	14	28.0	5	20.0	9	36.0
Total Low	22	44.0	11	44.0	11	44.0
Total	50	100.0	25	100.0	25	100.0

**Panel C: Reactions to Task Details<sup>a</sup>**

Item (n = 50 for each)	Mean (Std. Dev.)
1. Task requests easy to understand	0.68 (1.42)
2. Task was very difficult to do	-1.30 (1.16)
3. Task was very realistic	0.08 (1.16)

*(continued on next page)*

TABLE 1 (continued)

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- <sup>a</sup> Participants agreed with each statement on a scale ranging from -3 to +3 anchored by “Strongly Disagree” and “Strongly Agree.”
- <sup>b</sup> Classification as Low and High RQ is based on a median split of the average of the six items included in the composite measure.
- <sup>c</sup> Factor analysis shows all six items load on one factor (loadings all > 0.70) with high scale reliability (Cronbach’s alpha = 0.90).
- <sup>d</sup> Participants’ ranking of the bad debts task as being ethical in nature. The other five choices as to the type of task were: financial, accounting, business, managerial, and strategic. A rank of “1” indicates primarily ethical in nature while a rank of “6” indicates little or no ethical dimension to the task. We use a median split to categorize participants as having “High” (ranks 1–4) or “Low” beliefs about the ethical nature of the task.
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Our approach to evaluating ethicality is similar to that used by Kadous et al. (2009) to measure participants’ attributions for analysts’ forecast accuracy. They provided participants with six possible attributions and required them to rank them from one to six. Although Kadous et al. (2009) use the mean rankings as dependent variables, their forced ranking approach to variable measurement is comparable to ours. To further evaluate the construct validity of our *Ethicality* measure, we created binary variables for each of the other five task dimensions included in the post-experiment questionnaire. For example, we created a variable “*Financial*” which we categorized as “low” and “high” based on a median split of participants’ rankings of “financial” as the type of task the provision of bad debts estimates represents. We repeated this procedure for each of the other four task dimensions. In separate analyses, we substituted each of these binary measures of task beliefs for *Ethicality* to determine if they predict bias in the same way. Unlike the ethicality dimension, we have no theoretical basis for expecting that participants who view the task as primarily *Financial*, for example, would systematically vary in bias from those who do not see the task that way. Results (not tabulated) indicate that none of the five other measures of how participants perceived the task significantly affect the amount of bias created. Further, none significantly interact with bias direction requested (income-increasing versus -decreasing). These additional analyses support the discriminant validity of our ethicality measure.

Bias direction (*Direction*) was manipulated as follows. In each period the manager had a randomly determined preference for the type of estimate to be provided by the subordinate: accurate, income-increasing, or income-decreasing.<sup>12</sup> This manipulation was within-subjects; each participant was requested to provide each type of estimate over the 30 periods (i.e., ten of each type). Although there is some evidence indicating managers’ reporting preferences (e.g., conservatism) may be relatively stable (e.g., Bamber et al. 2010), it may also be the case that the incentives affecting these preferences will vary over time. For instance, managers may prefer income-increasing bias to reach a bonus threshold, income-decreasing bias to smooth earnings or reduce taxes, or accuracy to minimize auditor scrutiny in particular years. Our design choice allows us to explore how subordinates respond to these varying requests from the manager.<sup>13</sup>

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<sup>12</sup> We include the “accurate” requests for two reasons. First, we wanted to avoid participants becoming suspicious about a manager always requiring biased estimates (income-increasing or -decreasing). Second, we wanted a benchmark condition to determine if participants could provide unbiased estimates to rule out the alternative explanation that some participants are naturally biased in one direction or another, and that it has nothing to do with the desires of the manager.

<sup>13</sup> We acknowledge that this design choice prevents us from addressing how subordinates respond to consistent and repeated requests for bias in one direction. Also, we have no way of knowing whether, given the absence of face-to-face interactions with the manager, some participants simply assumed that all requests for estimates were from the experimenter. Differing perceptions about the source of the requests would likely create noise in participants’ responses, making it more difficult to observe our predicted effects.

We acknowledge that manipulating bias direction within subjects may have generally alerted participants to the purpose of our study (i.e., examining compliance with requests for biased estimates). However, given the complexity of our complete research design and the interactions predicted by H3 and H4 we believe the likelihood of demand effects is low. That is, we think the probability is minimal that participants, despite being aware of the different types of bias being examined (income-increasing and income-decreasing) would have also: correctly identified the study's other independent variables (relationship quality and beliefs about task ethics); and correctly guessed our predictions as to how these variables would separately and jointly impact compliance for the different types of bias requested.<sup>14</sup> Accordingly, we do not believe the use of a within-subjects manipulation of bias direction impairs our ability to make inferences about the factors predicted to affect compliance with requests for biased information.

Manager compensation was increased as their subordinates collectively complied with the manager's requests for an estimate of a particular type. For example, when the manager requests an income-increasing estimate, manager compensation is increased as the value for bad debts expense submitted decreases (reducing reported expense and boosting reported income). For income-decreasing requests, the manager benefits from a subordinate estimate that is larger (i.e., higher bad debts expense). For accurate requests, the manager benefits from a smaller difference between the estimate submitted and actual bad debt rate. The varying requests also make explicit that the manager benefits from the actions of the subordinate.

Finally, we asked participants for their perceptions about the understandability of the task requests, the difficulty of the task, and the realism of the task. In each case a  $-3$  to  $+3$  scale was used with endpoints "Strongly Disagree" and "Strongly Agree." As shown in Panel C, Table 1, participants expressed moderate agreement that the task was easy to understand and realistic (means of 0.68 and 0.08) and not very difficult (mean  $-1.30$ ). Analyses (not tabulated) indicate that participants' responses to these questions do not differ across low and high relationship quality or low and high *Ethicality* groups.

### Task Details

To generate the bad debts estimate, participants make two sequential decisions. First, they choose an amount of costly "effort" that determines the precision of the estimate to be submitted. As can be seen in Table 2, as effort increases, the range of likely estimate values around the most likely value decreases. Second, participants choose an estimate value from within the range of likely values determined by the effort choice to submit to the manager. For example, assume a participant chooses an effort level of 5. After submitting the effort choice, the participant learns the randomly determined most likely value for the estimate, e.g., 5.5 percent. Because the confidence interval associated with an effort level of five is  $\pm 2.5$  percent, the participant may enter an estimate of any value between 3.0 percent and 8.0 percent. The actual bad debt result at the end of the period is drawn (by the computer program) from a normal distribution with mean equal to the most likely value (5.5 percent in this example) and 90 percent of the time will be within the confidence interval chosen by the participant ( $\pm 2.5$  percent in this example). The participant is aware of this relation when making the effort and estimate choices. To provide a strong test of our theory, we deliberately chose *not* to provide managers with information that would allow them to assess the extent of subordinates' compliance with requests for biased estimates. We did so to avoid subordinates feeling any pressure related to their manager's ability to detect non-compliance because research

<sup>14</sup> Shepanski et al. (1992) note that the likelihood of experiment participants providing a biased response (demand effects) is the product of three probabilities: correctly identifying the manipulated variables; correctly guessing the study's predictions; and being willing to behave in accordance with the study's predictions.

**TABLE 2**  
**Subordinate Compensation Scheme**

Column 1 Effort Level	Column 2 Your Cost (\$)	Column 3 Bad Debt Percent Range	Column 4 Bonus for Accuracy (\$)	Column 5 Total Expected Pay (\$)
0	0	+/- 5.0	0	0
1	1	+/- 4.5	2.5	1.5
2	2	+/- 4.0	4	2
3	3	+/- 3.5	5.5	2.5
4	4	+/- 3.0	7	3
5	5	+/- 2.5	8.5	3.5
6	6	+/- 2.0	10	4
7	7	+/- 1.5	10.5	3.5
8	8	+/- 1.0	11	3
9	9	+/- 0.5	11.5	2.5
10	10	+/- 0.25	12	2
11	11	+/- 0.1	12.5	1.5
12	12	+/- 0.05	13	1

This table is visible to all participants during each period. The wealth-maximizing choice is always an unbiased estimate and an effort level of 6, yielding expected compensation of \$4.00. Any deviation from this strategy necessarily decreases expected compensation.

shows such pressure can affect behavior (DeZoort and Lord 1997). While this approach abstracts from settings where managers may be able to evaluate subordinates' compliance with their requests for biased or unbiased information, it allows us to clearly isolate the effects of relationship quality and ethicality beliefs on behavior.

While effort is costly, the participant is also potentially rewarded with an accuracy-based bonus. As can be seen in Table 2, as the participant incurs costly effort to be more confident about the estimate, the bonus amount increases as well. The interaction of these two parameters—increasing cost and increasing bonus—creates an optimal *economic* strategy for the participant. The compensation scheme for the participants is constant across all request conditions such that in all periods the participant maximizes expected pay with a moderate level of effort (i.e., an interior optimum effort choice of 6, rather than the boundary effort levels of 0 or 12) and an unbiased estimate (i.e., the submitted estimate equals the most likely estimate).

At the end of each period, the actual bad debt rate for the period is determined. If the difference between the actual bad debt rate and the estimated bad debt rate is less than the range determined by the level of effort, the bonus is awarded (see Appendix A). If the difference is greater, no bonus is awarded. Compensation in any given period equals the bonus amount less the cost of the effort level chosen. Although greater bias is possible with lower effort levels, it is at the cost of lower expected bonuses.<sup>15</sup>

Participants were provided with all of the data in Table 2, including column 5, entitled “Total Expected Pay,” in every round, for reference. They were told specifically that estimates further away from the most likely value are increasingly less likely. As a result, any amount of bias (i.e.,

<sup>15</sup> We acknowledge that a strong incentive scheme (e.g., large bonuses for accuracy or large penalties for inaccuracy) may dominate any other factors affecting behavior and performance, including those of interest in this study. Consequently, our theory and results may not generalize to these extreme settings.

estimate other than the most likely value) decreases participants' expected wealth and larger deviations are increasingly costly. To help ensure that participants understood the task and compensation scheme details prior to completing the actual estimation rounds, they completed three practice rounds, one of which was specifically set to yield no bonus (i.e., the difference between the submitted estimate and the actual result for the period is greater than the allowed range). They also were given sample results for several periods and asked to calculate the bonus and the total pay they would receive. Participants could only proceed after correctly answering all questions.

After completing all 30 rounds of estimates, participants completed a series of demographic-type questions and learned their compensation for the task. All participants received a minimum of \$10 for completing the study. In addition, they received the sum of their net compensation (i.e., bonus less effort cost) from four randomly chosen rounds. If the participant maximized personal wealth, expected total compensation was approximately \$26. We employed this compensation approach to provide an incentive for the participants to maximize their wealth in *each* period, which would work against complying with the manager's requests to provide biased estimates.<sup>16</sup>

Our hypothesis tests are based on a final sample of 50 participants. Two participants were excluded because of missing responses (bad debt expense estimates not captured by the program). Two others were considered extreme outliers because, while being unbiased in accurate periods (0.0001 and 0.008), they provided estimates that were biased in the opposite direction to that requested in at least 11 of the 20 periods in which an income-increasing or -decreasing estimate was requested. The rate of "opposite direction" responses of these two participants (60 percent and 55 percent) was markedly greater—nearly five standard deviations—than the average (of about 5 percent) observed for the remaining 50 participants and was evenly distributed across bias direction. These participants likely became confused about the inverse relationship between expenses and income, e.g., that an income-*increasing* estimate would be a *lower* bad debt estimate.<sup>17</sup> This explanation is consistent with both participants finding the task more difficult than the average participant (0.50 versus  $-1.30$ ,  $p = 0.036$ , two-tailed).

## RESULTS

### Hypotheses Tests

Descriptive statistics for our dependent variables, absolute average percent bias, are summarized in Table 3, Panels A, B, and C, and the hypotheses tests are in Table 4, Panels A and B. For each participant, we first calculate the signed percentage bias in each period, i.e., (participant's estimate – most likely estimate)/most likely estimate. To simplify the presentation of our results, we average the percent bias for each participant for the ten periods within request type (accurate, income-increasing and income-decreasing), and take the absolute value.<sup>18</sup>

<sup>16</sup> The average pay, which did not significantly differ across conditions, was about \$17. At the end of the instrument, but prior to learning the amount of their payment, participants were also asked if they were willing to give up some of their compensation to the manager. If so, they could suggest a percentage and their final compensation was adjusted accordingly. We do not find any relations between responses to these questions and other variables collected.

<sup>17</sup> Including both of these extreme outliers (both in the "High" relationship quality condition) in the hypotheses tests weakens our results. Analysis (not tabulated) shows support only for H2 (*Ethicality* main effect) when all observations are included.

<sup>18</sup> Analysis (not tabulated) using *period* as an additional within-subjects factor shows only one significant interaction effect. Analysis of the interaction shows that participants in the high *RQ* condition complied more with requests for income-increasing estimates than their counterparts in the low *RQ* condition to a greater extent in the latter periods (6–10) than they did during the earlier periods (1–3).

Participants complied with requests for accurate estimates with the average bias across the 10 periods for all conditions of  $-0.007$ . As expected, an ANOVA (not tabulated) shows *Relationship Quality (RQ)*, *Ethicality*, and *RQ × Ethicality* all fail to predict the amount of bias created when participants are asked for accurate estimates (all  $p$ -values  $> 0.35$ ). Given these results, we do not consider behavior in accurate periods further. We use two dependent variables to test our hypotheses: (1) absolute average bias for the 10 income-increasing periods; and (2) absolute average bias for the 10 income-decreasing periods.

H1 posits that perceived relationship quality (*RQ*) has a direct effect on the overall level of bias, such that higher *RQ* leads to greater bias. H2 posits that beliefs about the ethics of the task (*Ethicality*) also have a direct impact on the overall level of bias, such that greater ethicality leads to less bias. To test these hypotheses, we employ repeated measures ANOVA, with *RQ* (high and low) and *Ethicality* (high and low) as between-subjects factors, and direction of bias requested (increasing or decreasing) as a within-subjects factor.

The high *RQ* subordinates complied more with requests for biased accounting estimates than their low *RQ* counterparts, averaging 6.9 percent bias versus 4.3 percent (Table 3, Panel A). *Ethicality* also influenced the amount of bias generated by participants in the expected direction (Table 3, Panel A). Those who considered providing accounting estimates to be relatively ethical in nature had an average of 4.3 percent bias, compared to 7.3 percent average bias for those who considered it less ethical in nature.<sup>19</sup> As shown in Table 4, *RQ* and *Ethicality* are both significant predictors of bias, across both directions of bias requested by the managers ( $p = 0.038$  and  $p = 0.022$ , respectively, one-tailed). The *Ethicality × RQ* interaction is not significant ( $p = 0.944$ ). Together with the descriptive data observed in Table 3, Panel A, these results in Table 4 are consistent with H1 and H2.

H3 predicts that ethicality will mitigate bias more for income-increasing requests than for income-decreasing requests. Table 3, Panels B and C present the absolute percent bias separately for increasing and decreasing requests. It appears that *Ethicality* has somewhat stronger mitigating effects when an income-increasing request is made, relative to an income-decreasing request. The difference in average bias across the low and high ethical ranks in the increasing periods is 3.8 percent (8.7 percent  $-$  4.9 percent), while the difference is 2.2 percent in the decreasing conditions (5.9 percent  $-$  3.7 percent). The results in Table 4 provide support for H3. We observe a marginally significant *Direction × Ethicality* interaction ( $p = 0.098$ , one-tailed) suggesting that participants' beliefs about task ethicality have different effects for income-increasing and -decreasing requests. An analysis of the simple effects of *Ethicality* (not tabulated) shows that the difference (3.8 percent) in the increasing periods is significantly greater than zero ( $p = 0.017$ , one-tailed), while the difference in the decreasing periods (2.2 percent) is marginally significant ( $p = 0.06$ , one-tailed). Thus, the nature of the interaction is consistent with our prediction that ethical concerns will reduce participants' compliance with managers' requests for biased information *more* when those requests are for income-increasing rather than income-decreasing requests, although ethicality still has an effect in income-decreasing periods.

H4 predicts that perceived relationship quality (*RQ*) will have a stronger effect on compliance with managers' requests for bias when those requests are for income-decreasing rather than income-increasing estimates, i.e., an interaction between *Direction* and *RQ*. The descriptive statistics in Table 3, panels B and C indicate that, consistent with H4, the difference in average bias across the low and high *RQ* conditions in income-decreasing periods is 3.4 percent (6.4 percent  $-$  3.0 percent), while it is 1.9 percent (7.5 percent  $-$  5.6 percent) in income-increasing periods. However, the

<sup>19</sup> We note that there is a significant main effect for request *Direction*, such that income-increasing bias is greater than income-decreasing bias. There is no obvious explanation for this result but it may be that satisfying aggressive reporting objectives is deemed to be of greater importance because of the implications of failing to do so (e.g., missing analysts' earnings forecasts).



**TABLE 3**  
**Descriptive Results and Repeated Measures Analysis**

**Panel A: Means (Standard Deviations) for Absolute Value of Bias (Income-Increasing and -Decreasing Requests) by Condition<sup>a</sup>**

	<u>Low RQ<sup>b</sup></u>	<u>High RQ</u>	<u>Average</u>
Low Ethical Rank <sup>c</sup>	6.0 (6.1) n = 11	8.6 (6.9) n = 11	7.3 (6.5) n = 22
High Ethical Rank	2.9 (3.1) n = 14	5.6 (4.3) n = 14	4.3 (3.9) n = 28
Average	4.3 (4.8) n = 25	6.9 (5.6) n = 25	

**Panel B: Means (Standard Deviations) for Income-Increasing Requests by Condition**

	<u>Low RQ</u>	<u>High RQ</u>	<u>Average</u>
Low Ethical Rank	7.9 (8.2) n = 11	9.6 (7.7) n = 11	8.7 (7.8) n = 22
High Ethical Rank	3.8 (3.8) n = 14	5.9 (5.1) n = 14	4.9 (4.5) n = 28
Average	5.6 (6.3) n = 25	7.5 (6.5) n = 25	6.6 (6.4) n = 50

**Panel C: Means (Standard Deviations) for Income-Decreasing Requests by Condition**

	<u>Low RQ</u>	<u>High RQ</u>	<u>Average</u>
Low Ethical Rank	4.2 (4.8) n = 11	7.6 (6.2) n = 11	5.9 (5.7) n = 22
High Ethical Rank	2.0 (3.0) n = 14	5.4 (5.0) n = 14	3.7 (4.4) n = 28
Average	3.0 (3.9) n = 25	6.4 (5.6) n = 25	4.7 (5.1) n = 50

<sup>a</sup> Absolute amount of bias created by participants averaged across 10 periods of income-increasing and 10 periods of income-decreasing requests.

<sup>b</sup> Relationship quality (RQ) High (Low) is based on a median split of the summed responses to six items. See Table 1 for details of the items included in our measure of relationship quality.

<sup>c</sup> Participants' ranking of the ethics (1–6) of the accounting estimate task performed in the experiment. A response of "1" ("6") indicates the participant believed the task was highly (not highly) ethical in nature. For purposes of the analysis, we include rankings of 1–4 in the "high ethicality" condition and 5–6 in the "low ethicality" condition.

**TABLE 4**  
**Repeated Measures ANOVA**

**Panel A: Between Subjects Factors (n = 50)<sup>a</sup>**

Source	Type III Sum of Squares	df	Mean Square	F	p-value <sup>e</sup>
Intercept	0.331	1	0.331	62.942	< 0.0001
Ethicality <sup>b</sup>	0.023	1	0.023	4.336	0.022
RQ	0.017	1	0.017	3.287	0.038
Ethicality × RQ	< 0.0001	1	< 0.0001	0.005	0.944
Error	0.242	46	0.005		

**Panel B: Within Subjects Factors (n = 50)<sup>c</sup>**

Source	Type III Sum of Squares	df	Mean Square	F	p-value <sup>e</sup>
Direction <sup>d</sup>	0.010	1	0.010	10.647	0.002
Direction × Ethicality	0.002	1	0.002	1.712	0.098
Direction × RQ	0.001	1	0.001	1.484	0.115
Direction × Ethicality × RQ	< 0.0001	1	< 0.0001	0.043	0.836
Error (Direction)	0.043	46	0.001		

Dependent Variable: *Absolute Value of Bias*, which equals the absolute amount of bias created by participants averaged across 10 periods of income-increasing and 10 periods of income-decreasing requests.

<sup>a</sup> Between-participants classification of relationship quality (RQ): high (low). See Table 1 for details of the items included in our measure of relationship quality.

<sup>b</sup> Participants' ranking of the ethics (1–6) of the accounting estimate task performed in the experiment. A response of “1” (“6”) indicates the participant believed the task was highly (not highly) ethical in nature. For purposes of the analysis, we include rankings of 1–4 in the “high ethicality” condition and 5–6 in the “low ethicality” condition.

<sup>c</sup> Main effects for the within-subjects factor “period” (10 trials for each type of request) are not significant, nor are any of the interactions involving “period.” Accordingly, to simplify the results presentation we omit “period” from the analysis and presentation above.

<sup>d</sup> Within-subjects factor for type of request (income-increasing or income-decreasing).

<sup>e</sup> All reported p-values for main effects and two-way interactions involving *Ethicality* and *RQ* are one-tailed in keeping with our directional predictions. All other p-values are two-tailed.

*Direction* × *RQ* interaction reported in Table 4 is not significant at conventional levels ( $p = 0.115$ , one-tailed) and thus H4 is not supported.

## DISCUSSION AND CONCLUSIONS

Our findings extend the accounting literature on control environments by focusing on a unique aspect of the control environment not previously considered, the perceived relationship between subordinates and managers (Lindsay et al. 1996). Although researchers and accounting academics have previously suggested that employees are an integral part of the control environment (e.g., Simons 1995), we examine a factor that may compromise employees' willingness to curb managers' opportunistic behavior.

We find evidence consistent with subordinates' perceptions of relationship quality being a key determinant of whether they will comply with managers' requests to bias or “manage” reported

financial performance. While studies have considered the extreme act of whistle-blowing as a control mechanism (e.g., [Bowen et al. 2010](#)), we evaluate more subtle, preventative, and routine ways in which subordinates might mitigate manager opportunism.

In our experiment, subordinates who perceive a higher-quality relationship with their manager provide that manager with systematically more biased accounting estimates when asked to do so. This occurs despite the fact that our participants incurred a personal economic cost in the form of reduced expected compensation to comply with this request. Thus, while cultivating closer relationships between subordinates and managers can certainly be valuable to an organization, that same relationship can compromise controls in some contexts, such as providing internal or external financial reports. Given the many benefits of high-quality relationships, we certainly do not advocate cultivating low-quality relationships. Rather, this finding suggests the potential value of future research exploring strategies that yield the benefits of high-quality relationships without diminishing the control function of the subordinate.

Our study also builds on prior research that has recognized the ethical dimension of earnings manipulation ([Kaplan et al. 2007](#)) by identifying a scenario in which ethical concerns are more likely to influence behavior (e.g., requests for income-increasing bias). We predict that subordinates likely view the task of providing accounting estimates as having a more important ethical dimension when it results in higher earnings. Although our results support this prediction, ethical perception was instrumental in curbing bias whether the request was for decreased or increased earnings. This result is contrary to the popular belief that upward earnings manipulation is perceived as unethical but conservative bias is perceived as acceptable, perhaps even good. We also find that individuals vary in the extent to which they see provision of accounting estimates as an ethical task. Arguably, intentionally creating any form of bias in accounting estimates is wrong. Further research could help specify the reasons why some individuals view the task of creating accounting estimates as relatively ethical, while others do not. One promising direction is the recent research on “bounded ethicality,” which suggests that individuals may be able to judge the ethics of a situation more easily if they are considering it in the abstract or when others are involved than when the self is involved ([Chugh et al. 2005](#)). In addition, although it may not capture the accounting setting as well, research could look at the mitigating aspects of ethicality when consequences of biased estimates are more explicit, immediate, and direct ([Rest 1986](#)).

Finally we contribute to a growing body of research examining factors that influence honesty in reporting when individuals have incentives to report dishonestly (e.g., [Evans et al. 2001](#); [Rankin et al. 2008](#)). In what we view as an instructive departure from the honesty literature, we provide incentives for individuals to report honestly (i.e., provide unbiased estimates) and document non-pecuniary factors that either work against (relationship quality) or reinforce (ethicality concerns) these incentives when a request is made to report dishonestly. We believe our study complements prior research by focusing on some of the tensions that exist in hierarchical organizations where superior and subordinates’ desires for unbiased (honest) information may not necessarily be aligned.

Our study has limitations, which provide opportunities for future research. First, while our results indicate that higher-quality relationships between subordinates and managers result in more biased accounting estimates, our research design does not permit us to make any claims regarding the materiality of potential misstatements resulting from these choices. Whether or not subordinates would knowingly, materially misstate internal or external financial reports as a result of the quality of manager-subordinate relationship is an empirical question. Second, our participants are graduate accounting students in a co-operative program (i.e., work-study) with limited professional experience (average = 1.25 years) so it is unclear whether our theory would generalize to more experienced professionals. However, all of our participants had completed coursework in business ethics and many would likely have been exposed to ethical codes of conduct at their place of employment during work term appointments. Thus, we believe they are reasonable proxies for the

type of employees who would be responsible for providing input on accounting estimates (i.e., accounting staff at non-management levels).

Finally, we acknowledge that we do not have true manager-subordinate interactions and that in practice subordinates may be accountable to more than one manager who may have conflicting objectives (e.g., reporting preferences) and with whom the quality of the relationships may differ. We leave it to future research to the impact of relationship quality on subordinate behavior in settings where multiple accountability relationships exist. Moreover, the challenges of achieving a strong manipulation of perceived relationship quality in a laboratory setting may have reduced the statistical significance of some of our results. However, we believe this limitation of studying manager-subordinate relationship effects in lab experiments lends credibility to the support we do find for most of our hypotheses. Given the low likelihood of gaining access to archival data to test our hypotheses and the issues associated with using survey data gathered from actual managers (e.g., social desirability bias) on this topic, we believe experiments are perhaps the only valid and feasible method for studying our research questions.

## REFERENCES

- Anthony, R., and V. Govindarajan. 2007. *Management Control Systems*. New York, NY: McGraw-Hill Irwin.
- Ashbaugh, H., R. LaFond, and B. W. Mayhew. 2003. Do non-audit services compromise auditor independence? Further evidence. *The Accounting Review* 78 (3): 611–639.
- Atwater, L., and A. Carmeli. 2009. Leader-member exchange, feelings of energy, and involvement in creative work. *Leadership Quarterly* 20: 264–275.
- Bamber, L. S., J. Jiang, and I. Y. Wang. 2010. What's my style? The influence of top managers on voluntary corporate financial disclosures. *The Accounting Review* 85 (4): 1131–1163.
- Bartlett, C. A., and S. Ghoshal. 1995. Changing the role of top management: Beyond strategy to purpose. *Harvard Business Review* 72 (6): 79–88.
- Basu, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24: 3–37.
- Becker, C. L., M. L. Defond, J. Jiambalvo, and K. R. Subramanyam. 2003. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15 (1): 1–24.
- Bowen, R. M., A. C. Call, and S. Rajgopal. 2010. Whistle-blowing: Target firm characteristics and economic consequences. *The Accounting Review* 85 (4): 1239–1272.
- Brower, H. H., F. D. Schoorman, and H. H. Tan. 2000. A model of relational leadership: The integration of trust and leader-member exchange. *Leadership Quarterly* 11 (2): 227–250.
- Butterfield, K., L. Trevino, and G. Weaver. 2000. Moral awareness in business organizations: Influences of issue-related and social context factors. *Human Relations* 53 (7): 981–1018.
- Chugh, D., M. H. Bazerman, and M. R. Banaji. 2005. Bounded ethicality as a psychological barrier to recognizing conflicts of interest. In *Conflicts of Interest*, edited by Moore, D. A., D. M. Cain, G. Loewenstein, and M. H. Bazerman. London, U.K.: Cambridge University Press.
- Crosby, L. A., K. R. Evans, and D. Cowles. 1990. Relationship quality in services selling: An interpersonal influence perspective. *The Journal of Marketing* 54 (3): 68–81.
- Davis, S., T. DeZoort, and L. Kopp. 2006. The effect of obedience pressure and perceived responsibility on management accountants' creation of budget slack. *Behavioral Research in Accounting* 18: 19–36.
- DeZoort, T., and A. Lord. 1997. A review and synthesis of pressure effects research in accounting. *Journal of Accounting Literature* 16: 28–85.
- Dozier, J. B., and M. P. Miceli. 1985. Potential predictors of whistle-blowing. A prosocial behavior perspective. *Academy of Management Review* 10 (4): 823–836.
- Duchon, D., S. Green, and T. Taber. 1986. Vertical dyad linkage: A longitudinal assessment of antecedents, measures, and consequences. *Journal of Applied Psychology* 71: 56–60.

- Dunegan, K. J., D. Duchon, and M. Uhl-Bien. 1992. Examining the link between leader member exchange and the subordinate performance: The role of task analyzability and variety as moderators. *Journal of Management* 18: 59–76.
- Evans, J. H. III, R. L. Hannan, R. Krishnan, and D. V. Moser. 2001. Honesty in managerial reporting. *The Accounting Review* 76 (4): 537–559.
- Graen, G. B., R. Liden, and W. Hoel. 1982. Role of leadership in the employee withdrawal process. *Journal of Applied Psychology* 67: 868–872.
- Graen, G. B., and M. Uhl-Bien. 1995. Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly* 6 (2): 219–247.
- Gundiach, M. I., S. C. Douglas, and M. J. Martinko. 2003. The decision to blow the whistle: A social information processing framework. *Academy of Management Review* 28 (1): 107–123.
- Gunny, K. A. 2010. The relation between earnings management using real activities manipulation and future performance: evidence from meeting earnings benchmarks. *Contemporary Accounting Research* 27 (3): 855–888.
- Harris, K. J., R. B. Harris, and R. L. Brouer. 2009. LMX and subordinate political skill: direct and interactive effects on turnover intentions and job satisfaction. *Journal of Applied Social Psychology* 39 (10): 2373–2395.
- Jones, T. 1991. Ethical decision making by individuals in organizations: An issue-contingent model. *Academy of Management Review* 16 (2): 366–395.
- Kadous, K., M. Mercer, and J. Thayer. 2009. Is there safety in numbers? The effects of forecast accuracy and forecast boldness on financial analysts' credibility with investors. *Contemporary Accounting Research* 26 (3): 933–968.
- Kaplan, S., J. McElroy, S. Ravenscroft, and C. Shrader. 2007. Moral judgment and causal attributions of engaging in earnings management. *Journal of Business Ethics* 74: 149–164.
- Legace, R. R. 1990. Leader-member exchange: Antecedents and consequences of the cadre and hired hand. *The Journal of Personal Selling and Sales Management* 10 (1): 11–19.
- Liden, R., and J. Maslyn. 1998. Multidimensionality of leader-member exchange: An empirical assessment through scale development. *Journal of Management* 24 (1): 43–72.
- Lindsay, M., L. Lindsay, and B. Irvine. 1996. Instilling ethical behavior in organizations: A survey of Canadian companies. *Journal of Business Ethics* 15 (4): 393–407.
- Rankin, F. W., S. T. Schwartz, and R. A. Young. 2008. Management control using nonbinding budgetary announcements. *Journal of Management Accounting Research* 15: 75–93.
- Rest, J. R. 1986. *Moral Development: Advances in Research and Theory*. New York, NY: Praeger.
- Scandura, T., and G. B. Graen. 1984. Moderating effects of initial leader-member exchange status on the effects of a leadership intervention. *Journal of Applied Psychology* 69: 428–436.
- Shepanski, A., R. Tubbs, and R. Grimlund. 1992. Issues of concern regarding within- and between-subjects designs in behavioral accounting research. *Journal of Accounting Literature* 11: 121–150.
- Simons, R. 1995. Control in an age of empowerment. *Harvard Business Review* 73 (2): 8–88.
- Stepina, L. P., P. L. Perrewew, and B. L. Hassell. 1991. A comparative test of the independent effects of interpersonal, task and reward domains on personal and organizational outcomes. *Journal of Social Behavior and Personality* 6: 93–104.
- Stevens, D. 2002. The effects of reputation and ethics on budgetary slack. *Journal of Management Accounting Research* 14: 153–171.
- Stevens, J. 1996. *Applied Multivariate Statistics for the Social Sciences*. 3rd Ed. Hillsdale, NJ: Erlbaum Associates.
- Taylor, W. B., and R. J. Bloomfield. 2011. Norms, conformity and controls. *Journal of Accounting Research* 49 (3): 753–790.
- Tenbrunsel, A. E. 2005. Commentary: Bounded ethicality and conflicts of interest. In *Conflicts of Interest*, edited by Moore, D. A., D. M. Cain, G. Loewenstein, and M. H. Bazerman. London, U.K.: Cambridge University Press.

- Trevino, L. 1986. Ethical decision-making in organizations: A person-situation interactionist model. *Academy of Management Review* 11 (3): 601–617.
- Vance, T. W. 2010. Sub certification and relationship quality: Effects on subordinate effort. *Contemporary Accounting Research* 27 (3): 959–981.
- Wall Street Journal*. 1999a. Digits: Gambits and gadgets in the world of technology. (January 14).
- Wall Street Journal*. 1999b. Microsoft faces investigation by SEC over its accounting. (July 1).
- Watts, R. L. 2003. Conservatism in accounting, Part 1: Explanations and implications. *Accounting Horizons* 17 (3): 207–221.
- Zhang, Y. 2008. The effects of perceived fairness and communication on honesty and collusion in a multi-agent setting. *The Accounting Review* 83 (4): 1125–1146.

## APPENDIX A

### Experiment Materials

All questions are answered on a scale from  $-3$  to  $+3$ , anchored by “Strongly Disagree” and “Strongly Agree.” The responses are added together to reach a relationship quality score that varies between  $-27$  and  $+27$ .

1. My manager would be a lot of fun to work with.
2. I like my manager as a person.
3. My manager is the kind of person I would like to have as a friend.
4. My manager would come to my defense if I were “attacked” by others.
5. My manager would defend me to others in the organization if I made an honest mistake.
6. My manager would defend my work actions to a superior, even without complete knowledge of the issue in question.
7. I would not mind working my hardest for my manager.
8. I would be willing to do work for my manager that goes beyond what is specified as my task.
9. I would be willing to apply extra efforts, beyond those normally requested, to meet my manager’s work goals.

### Sample Screen Shots

The following are representative screen shots of the user interface with the experiment website.

*Order of Events*

http://www.alanwebb.ca - Estimation Task

### Subordinate Instructions - Task

To summarize, each period will proceed as follows:

1. Your manager's requirement for an income increasing, income decreasing or accurate estimate is communicated to you. Your manager's compensation is increased as you comply with the manager's requirement.
2. You choose a level of effort.
3. You learn the most likely estimate value.
4. You choose a value to estimate (from within the available range).
5. The actual bad debt expense is discovered.
6. Your estimate is compared to the actual bad debt expense rate to determine your bonus compensation. Your compensation for the period equals your bonus for accuracy minus your effort cost.
7. The period ends.

[Next](#)

http://www.alanwebb.ca/ada/practice.php

http://www.alanwebb.ca - Estimation Task

### Subordinate Payout

Period: 1

Your effort level: 6  
 Effort cost: \$6.00  
 +/- Range: 2%

Estimate: 6%  
 Actual bad debt expense: 5.11%  
 Difference: 0.89%  
 Because 2% (range determined by effort level) >= 0.89% (actual difference), bonus = \$10.00

Period Pay: \$4.00

[Next](#)

Done

**Total payment**

A screenshot of a web browser window. The address bar shows "http://www.alanwebb.ca Estimation Task". The main content area displays the following text:

**Conclusion**  
Period 4: \$3.50  
Period 9: \$3.00  
Period 21: \$-3.00  
Period 23: \$3.00  
  
Gross Total: \$6.50  
Contribution: 0%  
  
Net Total: \$6.50  
  
Thank you for participating. Please see the facilitator for your payment.

The browser window has a standard Mac OS X title bar with three window control buttons (red, yellow, green) on the left and a close button on the right. The status bar at the bottom of the window shows the word "Done" and a small icon on the right.



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