

THE IMPACT OF THE SIGN AND SOURCE OF PERFORMANCE FEEDBACK ON AUDITORS' TECHNICAL AND ETHICAL JUDGMENTS

SUMMARY

This paper examines the effect of the sign (positive, negative) and source (audit partner, senior auditor) of performance feedback on subordinate auditors' technical and ethical judgments. Sixty-eight auditors, assigned to one of four conditions created by crossing feedback sign and feedback source, performed a technical task (i.e., task requiring the application of domain specific knowledge) and an ethical task (i.e., task requiring the reporting of private information). Auditors who received negative (compared to positive) feedback and those who received feedback from seniors (compared to partners) made larger sample size judgments on the technical task. Positive (compared to negative) feedback led to more ethical judgments but feedback source had no effect. Finally, pressure mediates the effect of feedback sign on ethical judgments but not on technical judgments. These results suggest that feedback that leads to technical improvements may undermine ethical behavior; this emphasizes the importance of tailored debriefing as part of any performance feedback regime.

Keywords: Feedback source; Feedback sign; Ethical judgment; Audit judgment

Data Availability: Contact authors.

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INTRODUCTION

In this paper, we examine the effects of performance feedback sign (i.e., whether the feedback is positive or negative) and performance feedback source (i.e., whether the feedback is from a senior auditor or an audit partner) on auditors' technical and ethical judgments. The study is important for several reasons. First, professional firms make significant investments of time and resources in obtaining and communicating performance feedback information to their employees (Accounting Office Management & Administrative Report 2006; McCarthy 2004; Hildebeitel et al. 2000). Underlying the use of performance feedback is the implicit assumption that it can improve performance, yet our knowledge of feedback effects is somewhat disjointed and limited (Bonner 2008). Most prior research on performance feedback has focused on understanding the evaluator's ratings but not on understanding the ratings' effect on the subordinate.

Second, many auditing tasks have a technical task component (i.e., component requiring domain specific knowledge) and an ethical task component (i.e., a component requiring the truthful reporting of information). For example, the confirmation of accounts receivable involves confirming receivables to substantiate the existence assertion (which involves technical competence) and reporting time spent on confirming receivables to be used for billing or budgeting purposes (which involves behaving ethically). It is important to examine the effect of performance feedback on each of these component tasks.

Third, given the hierarchical and pyramidal structure of public accounting, performance feedback can come from variety of sources (e.g., from a senior auditor or manager). Feedback source has been shown to be an important factor in understanding recipients' response (Fedor et

al. 2001; Schraeder and Simpson 2006). Understanding subordinate auditors' reaction to feedback from different sources remains critical in designing an effective feedback system.

Prior psychology studies show that negative (compared to positive) feedback exerts pressure on recipients, which tends to increase effort and improve performance on structured tasks (Kluger and DeNisi 1996). On the other hand, research on ethical decision-making suggests that increased pressure can induce unethical behavior (Lord and DeZoort 2001; for review see Jones et al. 2003). Based on these research streams, we hypothesize that negative (compared to positive) feedback will induce pressure, leading to enhanced technical task performance but impaired ethical task performance. Due to an absence of theory or specific empirical research on the effect of source of feedback, we do not offer specific hypotheses on the effect of feedback source on technical and ethical performance

Sixty-eight auditors were assigned to one of four conditions created by fully crossing feedback sign (positive versus negative) and feedback source (partner versus supervising senior). After reviewing background information, each participant indicated their affective state (which we used as a measure of their pressure state) and performed a sample size estimation task (determined sample size for audit work in the sales and receivables cycle) and an ethical task (reporting of additional non-budgeted work).

Consistent with our expectations, auditors who received negative (compared to positive) feedback chose a larger sample size and made less ethical judgments.¹ As predicted, we also found that pressure mediates the effect of feedback sign on ethical task performance but, unexpectedly, not on technical task performance. With respect to feedback source, auditors who

¹The sample size judgment is more of a measure of effort than accuracy. Thus, our dependent measure for the sample size estimation task is more of an effort measure. However, prior research has shown that effort is positively associated with accuracy (e.g., Kennedy 1993; Libby and Lipe 1992).

received feedback from seniors (compared to partners) chose a larger sample size. However, we found no association between performance feedback source and ethical performance.

Professional firms provide negative feedback with the expectation that the recipient will expend effort to improve the unsatisfactory performance. Our results show that the pressure from negative performance feedback has the desired impact on technical performance but an unanticipated deleterious effect on ethical judgments. Our results also show that the subordinate's immediate supervisor is the preferred person to provide feedback.

The remainder of this paper is organized as follows. The next section presents prior research and develops the hypotheses. The third and fourth sections present the experiment and results, respectively. Finally, the fifth section discusses future research directions and presents concluding comments.

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

We focus on performance feedback where auditors receive feedback on their cumulative work done for a period. Thus, unlike previous research (e.g., Ashton 1990), the feedback effects studied here do not relate to a particular task property but rather overall performance.² Performance feedback relates to many dimensions (e.g., client relations, technical competence, professionalism, collegiality, etc) and is typically used as a basis for compensation, promotion, directing employees' careers, enhancing auditors' job satisfaction, career development, and knowledge sharing (Patten 1995; Gregson 1990; Hildebeitel et al. 2000; Vera-Munoz et al. 2006). Prior research on performance feedback (referred to as performance appraisal in the literature)

²Task feedback is information about some element of judgment and decision-making that comes to the decision maker after the task has been performed (Bonner 2008). The critical component of this type of feedback is the linkage to a specific task. For instance, the viability status of a client provides task feedback, albeit imperfect, on a previous period going concern decision.

largely focuses on the raters (see Bonner 2008 for a review)³ and none of this research focuses on the effect of performance feedback on performance. Hence we must turn to other literature for guidance.

Feedback Sign

Feedback sign refers to whether a subordinate receives a positive or negative evaluation. In most public accounting firms, positive performance feedback is associated with bonuses and is a prerequisite for advancement to the next level in the hierarchy. Conversely, negative feedback could lead to low or no bonuses and is a signal that the ratee may be terminated unless performance improves in the next evaluation period. Thus, the intended effect of negative feedback is to exert pressure on the recipient to improve performance in the subsequent period (see Kluger and DeNisi 1996; DeZoort and Lord 1997). Performance is, however, not a unidimensional concept. For instance, most auditing tasks have both a technical and ethical component. In many cases, improvement on the technical component requires additional expenditure of effort. However, the effort exerted must also be reported for budgeting, billing, and evaluation purposes. This exerts pressure to underreport actual time spent on the task (e.g., Kelly and Margheim 1990; McDaniel 1990).

The varying effect of pressure on performance has been reported by many studies. For instance, time pressure may focus auditors on accumulating audit evidence documentation and reduce their focus on qualitative aspects of misstatements that may indicate fraud (Braun 2000). Similarly, the presence of fee pressure from clients can create an incentive for audit seniors to emphasize cost control, potentially impairing audit effectiveness (Houston 1999; Margheim and Kelley 1992; Public Opinion Board 1999; Bierstaker and Wright 2001). These findings suggest that *excessive* pressure can lead to a decline in technical performance. However, Ashton (1990)

³Research on performance appraisal has found significant inter-rater disagreements, ecological validity, and identity

reports that feedback increases the performance pressure on a decision maker and leads to performance improvement, although the improvement can be undermined by increased pressure from using a decision aid. Thus, appropriate level of pressure can enhance technical performance.

Based on this research, we expect auditors who receive negative performance feedback will have higher technical performance, evidenced in our study by the selection of a larger sample size. Hypothesis H1 tests for this association:

H1: Auditors who receive negative feedback will select larger samples than those who receive positive feedback.

Professional standards require ethical decision making and firm manuals emphasize the importance of truthful reporting of work done since budgets serve as a basis for billing and establishing future work standards. Prior research suggests that underreporting is an ethical decision (e.g., Ponemon 1992; Dirsmith and Covalleski 1985) that can be influenced by accountability pressures (i.e., pressures to be viewed favorably by one's superior) (Lord and DeZoort 2001). The specific ethical task considered in this study requires a staff auditor to decide whether to truthfully report the time spent on confirming receivables, relative to a time budget; the time reported may, in turn, have personal consequences impacting the auditor's performance evaluation.

Research on ethics suggests that increased pressure is negatively associated with ethical judgment (Jones and Ryan 1997; Shafer, Morris, and Ketchand 1999). Accounting studies also indicate that obedience and time pressures influence auditors' willingness to sign-off on materially misstated accounts and underreport time (e.g., Kelly and Margheim 1990; McDaniel 1990; Ponemon 1992; DeZoort et al. 2006; Lord and DeZoort 2001). These studies show that

bias. Further, ratings improve when raters use behaviorally anchored scales (see Bonner 2008 for a review).

pressure leads to unethical decisions. Consistent with the preceding research, we expect higher pressure generated from negative (compared to positive) feedback to impair ethical performance.

H2: Auditors who receive negative feedback will make less ethical judgments than those who receive positive feedback.

In addition to examining the effect of feedback sign on performance, we examine the role of pressure. Prior research has not examined the *mechanism* by which feedback improves task performance. It may be that feedback from a superior creates pressure on a subordinate to improve their job performance, but at the same time act more unethically. Therefore, the current study will explore the extent to which pressure *mediates* the influence of feedback on performance. This leads to our third hypothesis:

H3: Pressure will mediate the effects of feedback sign on auditors' technical and ethical judgments.

Feedback Source

Given the hierarchical structure of public accounting firms, downward feedback can emanate from multiple sources. This raises the question of how feedback source affects subsequent performance. The social psychology literature has long acknowledged and shown that feedback source is an important factor in understanding recipient responses to performance feedback (e.g. Ilgen et al. 1979). For instance, Ilgen et al. (1979, 350) notes that "... it is often difficult to separate the effects of the feedback information itself from the effects of the source. Usually the two are confounded. To understand the effects of feedback upon behavior, it is necessary to identify the source and to ascertain the source's influence on the response." Most of the psychology studies vary some characteristic of the source of feedback and examine its effect on the subordinate. For instance, Fedor et al. (2001) varies dimensions of the supervisor's power and found that supervisors with high perceived expertise or referent power will tend to motivate

performance improvement following negative feedback. Other studies vary the demographic similarity between the supervisor and subordinate and show that similarity improves subsequent performance (see e.g., Liden et al. 1993; Schrader and Simpson 2006).

These studies, however, do not address the situation where supervisors at different levels in the firm are providing the performance feedback. The closest is the study by Fedor et al. (2001), which suggests that subordinates should be more responsive to negative feedback from the source that is perceived to have more expertise, presumably the distant supervisor in a hierarchy system where promotion is by merit. However, alternative arguments can be readily made. First, a subordinate is in more constant contact with the immediate supervisor. As such, he might consider the immediate supervisor to be in a better position to evaluate his performance. Second, the literature suggests that peers could have considerable influence on each other. Studies show that peer pressure has been associated with dysfunctional behaviors, such as underreporting of audit time (Lightener et al. 1982; Dirsmith and Covalesski 1985; McNair 1991; Ponemon 1992). That is, peer pressure leads to unethical behavior. On the other hand, in a series of field studies in a manufacturing environment, Falk and Ichino (2003) found that productivity improved (declined) when workers were told of the relatively high (low) output of an artificial colleague. Peer pressure effects were most positive when less productive workers were paired with more productive workers. That is, peer pressure improved technical performance.

Given the absence of theory and relevant direct empirical evidence, we posit the null hypotheses:

H4: There is no difference in the sample size selection of auditors who receive feedback from a direct superior and those who receive feedback from a distant superior.

H5: There is no difference in the ethical judgments of auditors who receive feedback from a direct superior and those who receive feedback from a distant superior.

METHOD

Participants

Sixty-eight auditors (32 staff, 36 seniors) from one of the Big Four firms and the Florida Institute of Certified Public Accountants participated in the experiment during various training sessions and during a continuing professional education meeting, respectively.⁴ The mean (SD) public accounting experience of participants was 2.20 (.92) years.

Experimental Materials

Each participant was asked to assume the role of a senior auditor assigned to a year-end audit. Some general background information was provided on the fictitious client company and each participant was told that he/she was a member of a 7-person audit team consisting of an audit partner, an audit manager, 2 audit seniors (1 supervising senior and the participant), and 3 staff auditors. Participants were then told that they were reporting to a supervising senior or audit partner, which served as the feedback source manipulation. Following this, participants read their positive or negative performance evaluation, provided by either the senior or partner, on their most recently completed audit. After receiving the performance evaluation, participants completed the Positive and Negative Affect Scale [PANAS] (Watson and Tellegen 1988). The PANAS lists 20 adjectives and requires participants to indicate their feelings on a 6-point scale (1 = “not at all” and 6 = “extremely”) following each adjective. The adjectives describe positive (e.g., excited, inspired) and negative affective (e.g., distressed, hostile) states.

Finally, participants completed the sample size estimation and ethical tasks. In the sample size estimation task, participants were given the following paragraph describing some

⁴ There were no statistically significant differences found in the performance of Big 4 versus FICPA auditors.

background information on the internal controls, sales and accounts receivable of VMC Company:

“The internal controls over VMC’s sales and accounts receivable cycle are strong. You have tested the general, application and monitoring controls over this cycle and have found them to be excellent, consistent with prior year’s. VMC’s sales total \$550 million, more than 70% of which are made up of individual sales of \$100,000 or more and the remaining sales consisting of smaller individual sales of less than \$25,000 each. VMC’s accounts receivable year-end balance is \$20 million, more than 70% of which is made up of individual customer balances that exceed \$100,000 and the remaining amount consisting of smaller customer balances. Based on the excellent controls you have decided to limit the amount of substantive testing. That is, most of the assurance from these sales will come from test of controls.”

Participants were then asked to indicate the sample size for the confirmation of receivables.

In the ethical judgment task, participants were told that they were assigned to the additions of Property Plant and Equipment. The audit program indicated that a sample of all items over \$400,000 should be selected, plus a judgmental sample of smaller items. The sample was taken on a Friday when no one was around to answer questions about the appropriate size of the judgmental sample. Based on their own judgments, they selected 30 smaller items. The basis for doing this was that there were about 200 such items, so 30 (i.e., 15%) seemed like a reasonably good proportion of these small additions. They were also told the sample results, which indicated that the items over \$400,000 contained no misstatements and the first 10 small additions contained no misstatements. Further, the remaining 20 small additions contained several misstatements. Nevertheless, it was not clear if these misstatements were material and whether they used the correct sample size.

Participants were then told: “On the following Monday and before you had time to share their findings with any other audit team member, you received an urgent e-mail from your supervising senior auditor (or audit partner), which read as follows:

‘I hope you are done with vouching the additions. As I am sure you know, the sample for the small additions should not exceed 10. This is consistent with our firm’s sample selection procedures described in our audit manual. Specifically, a sample size of 10 is appropriate based on materiality considerations, the stratified sample approach which identifies all individually material items and the strength of internal controls over the acquisition and payment cycles. We need to be careful with how much time we spend in the property area as this does not represent a critical area.’”

Participants were then asked to indicate on a scale from 1 (not at all likely) to 10 (highly likely) the likelihood that they would report an additional amount that they sampled (i.e., self-reported ethical judgment). Because prior research suggests that participants tend to be sensitive to such self-reported questions (e.g., Ganster, Hennessey, and Luthans 1983; Fisher and Katz 2000), we also asked for the likelihood that other senior auditors would report this amount (i.e., referent group ethical judgment).⁵

After completing these tasks, participants provided demographic information. In addition, participants answered questions that served as manipulation checks of the feedback sign and source manipulations.

⁵We collected data related to the other-referent judgments for exploratory purposes. Analyses related to this dependent variable are not reported.

Independent and Dependent Variables

There were two independent variables: feedback source and sign.⁶ We manipulated feedback source by asking participants to assume that they were reporting to and evaluated by either a supervising senior auditor or an audit partner. Specifically, the Supervising Senior Auditor Condition was imposed as follows:

“Per your firm’s Performance Appraisal Development Program (PADP) hereafter, after every audit engagement, each member of the audit team is evaluated. For this engagement, you will be reporting to and evaluated by Paul Serento, who is the supervising senior auditor (or audit partner) on this engagement. Paul has been with the firm for 4 years (over 15 years) and is well-respected throughout the firm. He is considered a highly competent auditor and a reasonable and credible evaluator.”

The other independent variable, sign of feedback, was imposed by describing the auditor’s performance evaluation from his/her most recently completed audit engagement. Participants were told that their performance evaluation was based on the following criteria: timeliness in completing the audit program, knowledge of accounting and auditing, relation with the client and other audit team members (i.e., interpersonal skills), problem-solving ability, and technical auditing competence. In addition, participants were told that they were evaluated “relative to what is expected of senior auditors of the firm.” In the Positive (Negative) Feedback Condition, auditors were told the following: “You have performed above (below) average. Specifically, your performance is in the TOP (BOTTOM) 20%.” Below this feedback, auditors were presented with a performance scale indicating that they performed in the top (bottom) 20% and reminded that they had been evaluated by an audit partner (in the Audit Partner Condition) or a supervising senior auditor (in the Supervising Senior Condition).

⁶ The interaction term for these two variables was not significant for either task.

The dependent variables are the sample size and ethical task responses and our measure of pressure, described below. In the sample size task, participants asked to indicate the sample size for the confirmation of receivables. In the ethical judgment task, participants were asked to indicate on a scale from 1 (not at all likely) to 10 (highly likely) the likelihood that they would report an additional amount that they sampled to their supervisor and the likelihood that other senior auditors would report this amount to their supervisors.

We use participants' responses to thirteen of the twenty adjectives listed in the PANAS scale (Watson and Tellegen 1988) to measure pressure. Specifically, we measure pressure as the average response for seven adjectives identified as "positive pressure" adjectives and six adjectives identified as "negative pressure" adjectives.⁷ The seven positive pressure adjectives were interested, excited, enthusiastic, alert, inspired, determined, and attentive. The six negative pressure adjectives were distressed, upset, hostile, irritable, nervous, and jittery.

Manipulation Checks

Manipulation check questions in the post-experimental questionnaire were used to evaluate the feedback source and feedback sign manipulations. Of the 92 auditors who responded in total, 11 failed manipulation checks and 13 did not answer the manipulation check questions. Results are qualitatively similar regardless of whether or not these participants are included or excluded from the sample.⁸ Pressure scores were used to evaluate the validity of our proposition that negative feedback produce more pressure than positive feedback. We used pressure score as a dependent variable and sign of feedback as an independent variable. Source

⁷The seven adjectives of the PANAS scale that were not used to compute the pressure score are: strong, guilty, scared, proud, ashamed, active, and afraid.

⁸The responses to the background questions of the participants who failed the manipulation check were compared to those of participants who passed the manipulation check. The results of these comparisons revealed no significant differences. In addition, results discussed above remain the same whether tests are conducted with and without data from participants who responded incorrectly to the manipulation check questions. Reported results discussed above are based on responses of participants who passed the manipulation checks.

of feedback was used as a control variable. The descriptive statistics for pressure score are reported in Table 1 Panel A. The ANOVA results presented in Table 1 Panel B support our proposition ($F= 12.16, p < 0.001$).⁹

[Insert Table 1 here]

RESULTS

Descriptive Statistics

Table 2 presents the means, standard deviations, and cell sizes for all dependent variables across all feedback source and sign conditions and within each of these conditions.

[Insert Table 2 here]

Across subjects, the mean (SD) sample size was 22.65 (12.04) and the mean (SD) self-reported ethical judgment was 7.97 (2.09). Thus, participants were, on average, highly likely to report an over-budget situation (i.e., 7.97 on a scale of 10). The mean (SD) sample size was 32.40 (11.37) in the Senior Auditor—Negative Feedback Condition; 21.69 (11.09) in the Senior Auditor—Positive Feedback Condition; 19.81 (10.29) in the Audit Partner—Negative Feedback Condition; and 17.31 (10.72) in the Audit Partner—Positive Feedback Condition. Table 2 also shows that the mean (SD) likelihood of participants' self-reported ethical judgment was 8.63 (1.41) in the Senior Auditor—Positive Feedback Condition; 8.59 (1.58) in the Audit Partner—Positive Feedback Condition; 7.87 (2.45) in the Senior Auditor—Negative Feedback Condition; and 6.95 (2.37) in the Audit Partner—Negative Feedback Condition.

Hypotheses Tests

⁹Using the nonparametric Kruskal-Wallis test, the results are similar (Chi-Square = 9.98, $p = .002$).

Hypothesis H1 states that auditors who receive negative feedback will select larger samples than those who received positive feedback. H4 states that auditors who receive feedback from a direct superior will select the same samples as those who receive feedback from a distant superior. Feedback sign and feedback source were used as independent variables in the ANOVA with sample size as the dependent variable. ANOVA results, reported in Table 3, indicate significant main effects for both feedback sign ($F = 5.82, p < .01$, one-tailed) and feedback source ($F = 9.59, p = .003$, two-tailed).¹⁰ As indicated in Table 2, the mean (SD) sample size judgment was 25.90 (12.42) for auditors receiving negative feedback compared to 19.50 (10.95) for those receiving positive feedback. This is consistent with H1, in that negative feedback led to the exertion of more effort on a sample size estimation task (i.e., choosing a larger sample size). Thus, H1 is supported for the sample size judgment task.

[Insert Table 3 here]

As indicated in Table 2, the mean (SD) sample size judgment was 26.87 (12.30) for auditors receiving feedback from a senior compared to 18.56 (10.41) for those receiving feedback from a partner. This suggests that auditors receiving feedback from a *senior* (i.e., direct superior) are willing to more expend effort (i.e., select larger sample sizes) than those receiving feedback from a partner (i.e., distant superior), rejecting the null hypothesis H4.

Hypothesis H2 predicts that auditors who receive negative feedback will make less ethical judgments than those who receive positive feedback. Hypothesis H5 states that auditors who receive feedback from a direct superior will make the same ethical judgments than those who receive feedback from a distant superior. As reported in Table 4, there is a significant main effect of feedback sign ($F = 5.92, p < .01$, one-tailed). However, neither feedback source ($F = .94, p = .336$, two-tailed) nor the interaction between feedback sign and source ($F = .801, p =$

¹⁰ All tests for source of feedback are 2-tailed.

.374, two-tailed) reached significance. Thus, the null hypothesis H5 is not rejected. The descriptive statistics from Table 2 show that those who received positive feedback had a mean (SD) of 8.61 (1.48) likelihood of truthful reporting compared to 7.35 (2.41) for those who received negative feedback. This is consistent with H2.

[Insert Table 4 here]

In Hypothesis H3, we predict that the effect of feedback sign (Sign) on auditors' technical judgments (TJ) and on their ethical judgments (ET) will be mediated by pressure (P). According to Baron and Kenny (1986), to establish mediation, we must demonstrate (using three regression equations) that sign of feedback significantly affect the dependent variables (TJ, EJ), (2) the sign of feedback significantly affects pressure, the proposed mediating variable, and (3) the effect of the feedback sign reduces to non-significance (perfect mediation) or reduce in effect size (partial mediation) when the regression analysis includes the mediating variable (P), which is itself significant. This procedure demonstrates that the variance that was previously explained by the feedback sign can now be explained by the mediating variable (P).

The mediation analyses are presented in Table 5. We find that feedback sign independently affects technical performance ($b = -.268$, $p = .034$) and pressure ($b = -.394$, $p = .001$). When both feedback sign and pressure are included as regressors, sign is no longer significant ($b = -.224$, $p = .102$). This is not consistent with mediation since pressure is also not significant in the full model ($b = .111$, $p = .412$).

For ethical performance, we find that feedback sign independently affects performance ($b = .302$, $p = .013$) and pressure ($b = -.394$, $p = .001$). When feedback sign and pressure are included as regressors, sign is not significant ($b = .19$, $p = .144$), while pressure remains significant ($b = -.257$, $p = .049$), indicating perfect mediation.

[Insert Table 5 here]

DISCUSSION

We found that auditors who received negative (compared to positive) feedback made larger sample size judgments but made less ethical judgments. We also found that auditors who received feedback from an audit senior (compared to an audit partner) made larger sample size judgments but feedback source had no effect on ethical judgments. Finally we found that pressure mediates the effect of feedback sign on ethical task performance but not technical task performance. Therefore, it appears that negative (positive) feedback creates pressure that results in unethical (ethical) auditor behavior.

These results have implications for both research and practice. From a research standpoint, the current study is the first to study the effect of performance feedback on subordinates' subsequent performance, and the *mechanism* by which such feedback effects performance. It also highlights the importance of simultaneously studying the various components of performance. Frequently an intervention that enhances technical performance may decrease ethical performance. While the potential ethical compromise that can be created by incentive schemes have been recognized, fewer research resources have been devoted to ethical compromise that can arise out of performance enhancing feedback. Our study also contributes to the literature on pressures in the audit environment (see DeZoort and Lord 1997 for a review) by showing that feedback sign is an important source of performance pressure effects.

From a practical standpoint, our finding that auditors respond to negative feedback by making less ethical judgments may be of particular interest to the auditing profession given the increased interest in auditors' ethical behavior resulting from the corporate scandals and related audit failures of the early 2000s. This finding may also be especially relevant to the public accounting environment where institutional characteristics such as the evaluation process, interactions among client management and audit team members, and accountability relations

may implicitly impose negative feedback on auditors, thereby leading to potential quality-threatening effects.

In addition, since pressure-inducing events (such as performance reviews, negative feedback from PCAOB inspection reports, and incentives to maintain relationships with major clients) cannot be eliminated in audit practice (e.g., Bazerman et al. 2002; Imhoff 2003; Moore et al. 2006), strategies are needed to mitigate the effects of pressures. Such strategies might include internal peer review, additional training about complex trade-offs between audit effectiveness and client retention (DeZoort and Lord 1997), and appropriate debriefing to make auditors aware of the potentially deleterious effects of pressures, especially negative feedback pressures.

Our findings suggest that positive feedback shows promise as a means of encouraging auditors to be more ethical, particularly since prior research finds that short-term interventions rarely result in an improvement in individuals' ethical reasoning (e.g., see Schlaefli et al. 1985 for a review of the ethics intervention literature and Jones et al. 2003 for a review of the audit ethics literature). Similar to prior research (Massey and Thorne 2006), which suggests that task information feedback¹¹ is an effective method of promoting higher ethical reasoning, the current study suggests that positive feedback improves ethical performance. Thus, given the appropriate feedback, auditors may resolve dilemmas more ethically.

Of course, it is important for audit superiors to give both negative and positive feedback to their subordinates when appropriate. This is an important part of the coaching process for auditors. The challenge of using feedback as a performance-enhancing device is to maximize the positive effort effect and minimize the negative unethical effect. One practical approach might be to accompany negative feedback with a debriefing on the importance of ethically reporting

work. Likewise, positive feedback could be accompanied by effort-enhancing debriefing. Moreover, raising awareness among both subordinates and superiors of the pros and cons and negative and positive feedback could be valuable. In addition, audit firms would benefit from an investigation of communication styles that focus on constructive feedback to maximize the benefits of feedback while minimizing the potential negative consequences. Audit superiors could receive coaching on the most effective approach to communicating positive or negative feedback.

Future research could examine pressure effects on different aspects of auditors' tasks. For example, Jones (1991) identifies temporal immediacy of the ethical decision, which is the amount of time before the onset of any consequences (either good or bad) of the decision, as an important factor in determining ethical judgments. Future research could examine whether the temporal immediacy of an ethical decision moderates whether receiving positive or negative feedback influences decision-making in auditing, where performance feedback is immediate, but the discovery of audit failures and ensuing litigation occurs well into the future. Second, future research is needed to investigate ways of mitigating the influence of feedback sign and source on auditors' judgments. For instance, future research could explore if raising auditors' awareness of the potentially detrimental judgmental effects of negative performance feedback and feedback source, whether factors such as materiality or potential litigation and the extent to which quality control mechanisms such as manager or partner review of the senior auditor's work, internal peer review, second partner review, partner rotation, or PCAOB inspections may mitigate pressure effects.

Our findings must be interpreted with the following caveats. First, in this study, we used a sample estimation task to proxy for effort. While a higher estimated sample size would seem

¹¹Task information feedback is a type of cognitive feedback that provides subjects with guidance about the desired

to translate into auditors' intentions for higher effort in the future, the relation between sample size estimation and effort is not entirely straightforward. Second, auditors were randomly assigned to a performance feedback condition but did not receive feedback based on their actual performance.

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TABLE 1
Pressure Scores

Panel A: Descriptive Statistics (Mean, [SD], [n]) for Pressure in the Feedback Source and Sign Conditions

Feedback Source	Feedback Sign		Overall
	Positive Feedback	Negative Feedback	
Distant Superior (i.e., Audit Partner)	2.45 (.36) (17)	2.69 (.40) (19)	2.57 (.40) (36)
Direct Superior (i.e., Senior Auditor)	2.25 (.55) (17)	2.72 (.31) (15)	2.47 (.51) (32)
Overall	2.35 (.47) (34)	2.70 (.36) (34)	2.52 (.45) (68)

Panel B: Anova Results the Effect of Feedback Source and Sign on Pressure

Source	Type III Sum of Squares	Df	F	Sig
Source of Feedback	.118	1	.673	.415
Sign of Feedback	2.13	1	12.16	.001
Feedback Source X Feedback Sign	.226	1	1.29	.261
Error	11.22	64		

R Squared = .18 (Adjusted R Squared = .142)

TABLE 2
Descriptive Statistics for the Dependent Variables in the Source and Sign of Feedback Conditions

Feedback Source	Feedback Sign		Overall Mean (SD)
	Positive Feedback Mean (SD)	Negative Feedback Mean (SD)	
Distant Superior (i.e., Audit Partner)	8.59 (1.58) ^a	6.95 (2.37) ^a	7.72 (2.17) ^a
	17.31 (10.72) ^b	19.81 (10.29) ^b	18.56 (10.41) ^b
	n=16 to 17	n=16 to 19	n=32 to 36
Direct Superior (i.e., Senior Auditor)	8.63 (1.41) ^a	7.87 (2.45) ^a	8.26 (1.98) ^a
	21.69 (11.09) ^b	32.40 (11.37) ^b	26.87 (12.30) ^b
	n=16	n=15	n=31
Overall	8.61 (1.48) ^a	7.35 (2.41) ^a	7.97 (2.09) ^a
	19.50 (10.95) ^b	25.90 (12.42) ^b	22.65 (12.04) ^b
	n=32 to 33	n=31 to 34	n=63 to 67

^aThe likelihood that participants would report an additional amount that they sampled to their superior; reported on a 10-point scale where 1 = “not at all likely” and 10 = “highly likely.”

^bThe sample size for the confirmation of receivables.

TABLE 3
Anova Results of the Effect of Feedback Source and Sign on Sample Size Judgments

Source	Type III Sum of Squares	Df	F	Sig
Source of Feedback (H4)	1132.038	1	9.590	.003
Sign of Feedback (H1)	686.833	1	5.818	.019
Feedback Source X Feedback Sign	265.358	1	2.248	.139
Error	6964.913	59		

R Squared = .225 (Adjusted R Squared = .186)

TABLE 4
Anova Results for the Effect of Feedback Sign and Source on Ethical Judgments

Source	Type III Sum of Squares	Df	F	Sig
Source of Feedback (H5)	3.799	1	.940	.336
Sign of Feedback (H2)	23.922	1	5.921	.018
Feedback Source X Feedback Sign	3.237	1	.801	.374
Error	254.548	63		

R Squared = .116 (Adjusted R Squared = .074)

Table 5
Regression Results for Mediation Tests (H3)^a

Panel A: Sample Size Judgments (i.e., Technical Task Performance)^b

	Regression 1			Regression 2			Regression 3		
	Beta	t	p	Beta	t	p	Beta	t	p
Feedback Sign	-.268	-2.17	.034	-.394	-3.48	.001	-.224	-1.66	.102
Pressure							.111	.826	.412

Panel B: Ethical Judgments (i.e., Ethical Task Performance)^c

	Regression 1			Regression 2			Regression 3		
	Beta	t	p	Beta	t	p	Beta	t	p
Feedback Sign	.302	2.56	.013	-.394	-3.48	.001	.19	1.48	.144
Pressure							-.257	-2.0	.049

^aAccording to Baron and Kenny (1986), to establish mediation, we must demonstrate (using three regression equations) that (1) the independent variable (Sign) significantly affect the dependent variables (i.e., Sign → Technical Judgment, Ethical Judgment), (2) the independent variable significantly affects the proposed mediating variable (Sign → Pressure), and (3) the effect of the independent variable (Sign) reduces to nonsignificance (perfect mediation) or reduce in effect size (partial mediation) when the regression analysis includes the mediating variable (Pressure), which is itself significant. The three regression equations presented for each dependent variable represent this mediation test.

^bThe sample size for the confirmation of receivables.

^cThe likelihood that participants would report an additional amount that they sampled to their superior; reported on a 10-point scale where 1 = “not at all likely” and 10 = “highly likely.”