The Effect of Role-taking in the Auditor-Manager Interaction on Financial Reporting Quality

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ABSTRACT

We design an experiment to examine the effects of role-taking in the strategic interaction between auditors and managers on the quality of the audited financial statements. In our experiment, participants perform as either an auditor or a manager, and we manipulate the prior experience of each participant. In contrast to previous studies focusing only on the behavior of auditors or of managers, we examine financial reporting quality as jointly determined by both managers and auditors. Unlike studies investigating the influence of experience and expertise on the performance of auditors and managers, our study focuses on how experience in the role of one's counterpart improves one's ability to understand accurately the counterpart's incentives, and thereby improves the performance of both auditors and managers. We find that role-taking experience improves the quality of financial reporting in the following three ways: (1) auditors who have previously taken a manager's role are more accurate in discerning true earnings, based on managers' reports, (2) auditors with role-taking experience as managers are better able to contribute to high financial reporting quality, (3) managers with prior role-taking experience as auditors are more truthful in their financial reports. We also find that the effects of role-taking experience are not immediately transient. Our paper contributes to the literature on financial reporting quality in the following aspects: first, we introduce role-taking experience as a factor that improves both parties' performance in their strategic interaction, and results in improving financial reporting quality as jointly determined by their decisions. Our findings suggest that this benefit is not likely to diminish immediately. We also distinguish experience in another's role from knowledge and expertise gained through prior experience in the same role. We discuss the implications of our findings and propose avenues for future research.

Keywords: role-taking, perspective-taking, auditing, financial reporting quality, experimental economics

INTRODUCTION

This paper examines whether role-taking experience improves financial reporting quality as an output of the strategic interaction between auditors and managers, through providing each party with an enhanced understanding of the other party's incentives. Drawing on the theory of role-taking in social psychology, we argue that experience in the role of managers will improve auditors' ability to understand the *incentives* of managers and will result in auditors having a better understanding of their counterpart's perspective. Such experience in the role of managers is therefore expected to improve auditors' abilities to discern 'true' earnings and to contribute to high financial reporting quality. We also expect that experience in the role of an auditor should improve managers' understanding of auditors' incentives, and should lead managers to issue more truthful financial reports. Importantly, we argue that experience in the counterpart's role will have an incremental effect on financial reporting quality beyond the effect of 'book' knowledge of the counterpart's incentives, and beyond the effect of experience gained in the same role. Finally, we expect that the beneficial effects of role-taking experience on auditors' and managers' decision performance are not likely to be immediately transient.

We examine financial reporting quality as the output of the decisions made by both auditors and managers in their strategic interaction. We study how role-taking experience affects managers' financial reporting behavior as well as auditors' ability to discern true earnings and to contribute to high reporting quality. We build on earlier research documenting the importance of auditor experience to the effectiveness of the audit process (e.g., Abdolmohammadi and Wright 1987; Bonner 1990; Krishnan 2003). However, previous research has focused on studying how *audit* experience builds technical expertise, and how technical expertise affects auditors' competence in detection and curbing of earnings management. We focus on the perspective-

taking ability and understanding of management *incentives*[1] that auditors develop as a result of having experience in the role of managers, and study implications for improving financial reporting quality. Based on role-taking theory (Mead 1934; Moreno 1934, 1946), we expect that auditors' ability to place themselves 'in the shoes' of managers and to understand managers' incentives to manipulate earnings thereby improves auditors' ability to discern true earnings, ultimately leading to an improvement in the quality of the audited financial reports. In turn, managers who gain improved understanding of auditors' incentives through role-taking are expected to prepare more truthful financial reports.

Importantly, unlike prior research that has focused either only on manager behavior (e.g., Bowlin et al. 2009) or only on auditor behavior (e.g., Abdolmohammadi and Wright 1987; Bonner 1990; Krishnan 2003), we examine financial reporting quality as jointly determined by auditors and managers. In the strategic interaction between managers and auditors, we focus on the effects of role-taking experience on: (1) managers' decisions to report truthfully, (2) auditors' ability to accurately estimate 'true' earnings conditional on managers' reports, and (3) auditors' ability to contribute to high financial reporting quality.

We conduct an experiment in which 88 students are randomly paired to play an interactive strategic game. We use an abstract experimental setting in order to isolate the institutional accounting features of interest and the key elements of the auditor-manager strategic interaction, while abstracting away from confounding factors (Libby et al. 2002; Maines et al. 2006; Bowlin et al. 2009). In our experiment, we manipulate role-taking by exposing participants to experience in the role of their counterparts. Thus, some of the participants in our experimental economics game take the role of auditors (managers) in all rounds of the experiment, and are not exposed to the role of their counterparts; other participants gain the perspective of their counterparts by

taking the role of managers (auditors) in initial rounds and then switching to the role of auditors (managers) in subsequent rounds.

Our main findings are that, controlling for the level of technical knowledge and expertise, prior experience in the role of a manager has an incremental contribution beyond audit experience to enhance auditors' performance in contributing to high financial reporting quality. Specifically, auditors who have taken a manager's role are more accurate in their estimates of 'true' earnings, conditional on managers' reports. Auditors with prior role-taking experience as managers are also more likely to contribute to high financial reporting quality.[2] Further, managers who have previously taken the role of an auditor issue more truthful financial reports. In addition, given role-taking experience has occurred, a greater extent of role-taking experience does not incrementally improve auditors' and managers' judgment and decision making. Our results also suggest that the effects of role-taking experience on auditors' and managers' performance are not immediately transient.

Our study contributes to research on auditor's charge of improving financial reporting quality by documenting the incremental effect of experience in a manager's role on the performance of auditors in their interactions with management. Our results have important implications for audit practice. The incremental improvement in performance resulting from role-taking experience suggests that auditors would benefit from targeted training programs that involve role-taking, whereby auditors can receive first-hand exposure to management incentives. The implementation of role-taking training is likely to be accomplished relatively efficiently. As pointed out by Trotman et al. (2005), role-taking training is a relatively low-cost training method, since it could be conducted with other participants from the same firm.

In addition to role-taking training, audit firms are likely to benefit from the expertise of auditors with prior real-life management experience. Auditors who have left public accounting to take a job in industry, but later return to their original audit firm, are referred to as 'boomerangs' by the Big Four audit firms. Audit firms are increasingly spending greater amounts of resources in recruiting back former employees; each of the Big Four audit firms maintain alumni networks to help bring back former auditors, and raising the number of such recruits is an important goal (The Economist 2007; Zimmerman 2008). "Representatives from all of the Big Four say 'boomerangs'—as people who leave to later return are known—are invaluable resources" (Rana 2008). The recruitment of 'boomerangs' has been growing continually over the past decades, especially in the Big Four (Deloitte 2011; Badal 2006). As one of the directors for Americas recruiting at E&Y explains, "People who have gone out into the marketplace are coming back with stronger knowledge, a broader sense of experience, a broader skill set […] They're bringing that back to E&Y..." (Hyland 2006). According to a 2007 article in *The Economist*, 'boomerangs' comprise a quarter of the auditors hired each year by the Big Four in the US (The Economist 2007). Another article documents that in recent years, 25 percent of one of the Big Four's experienced new recruits are boomerangs (The Economist 2006). Results from our study suggest that audit teams can gain valuable insights from 'boomerang' auditors, and use their prior role-taking experience as managers to improve audit quality.

LITERATURE REVIEW AND HYPOTHESES

Perspective taking ability and performance

Perspective taking is the ability to entertain the psychological point of view of another (Davis et al. 1996), or to put oneself 'in another's shoes'. The importance of perspective taking in

cognitive processes was extensively studied in the work of Piaget (1950, 1932). Psychology research finds that individuals take another's perspective by simulating another's internal states, and that the form of simulation can vary depending on task demands (Niedenthal et al. 2005). For example, people may simulate cognitive states in some tasks, and emotional states in other tasks. While many kinds of perspective-taking have been studied in psychology (e.g., cognitive, visual, empathetic), our study focuses solely on *cognitive* perspective taking, defined as understanding, as accurately as possible, another's thoughts, attitudes, or concerns in a specific situation (Epley et al. 2006).

Prior studies indicate numerous cognitive benefits of successful perspective taking in various social interactions. For example, successfully taking another's perspective can reduce anchoring effects and confirmation bias (Galinsky and Mussweiler 2001) as well as in-group favoritism (Galinsky and Moskowitz 2000). Importantly, perspective taking leads decision makers to make causal attributions for another person's behavior that actually resemble that person's own causal attributions (Galper 1976; Regan and Totten 1975; Davis et al. 1996). Perspective taking can also reduce or even eliminate actor-observer differences in inferring behavioral causes (Jones and Nisbett 1971). In negotiations, being able to take the perspective of one's opponent leads to more beneficial outcomes for oneself (Galinsky and Mussweiler 2001). In team settings, accurate perspective taking increases comprehension of other people's messages and their retention in memory (Sessa 1996).

Perspective-taking ability can aid individual decision makers' strategic reasoning in interactions with their counterparts. Rational strategic reasoning is the process whereby an agent reasons about the best strategy to adopt in a multiple-player scenario, taking into account the likely behavior of counterparts, and in particular, how the counterparts' choice of strategy will

affect the choices of others. In strategic interactions, zero-order reasoning is reasoning in which decision makers only consider their own incentives, but not their counterparts' incentives. Zero-order reasoning involves "no understanding of the desires, beliefs, or thoughts of others" (Hedden and Zhang 2002), and can lead to myopic choices. In contrast, higher-order reasoning involves strategic consideration of the incentives of one's counterparts as well as consideration of counterparts' beliefs about, and anticipation of, one's own incentives (Hedden and Zhang 2002; Perner and Wimmer 1985; Colman 2003).

Strategic reasoning plays an important part in auditing (Bloomfield 1995). Zimbelman and Waller (1999) find that auditors who engage in higher-order reasoning consider the client's incentives and the client's anticipation of the auditor's behavior. Hoffman and Zimbelman (2009) examine the effect of strategic reasoning in an audit context when an auditor considers the following three questions: (1) what potential frauds may have occurred; (2) how could management conceal the potential frauds from the standard audit plan; (3) how could the audit plan be modified to detect the concealed frauds. Results from that study indicate that auditors prompted to reason strategically are more likely to modify the nature of their audit procedures in ways that are effective at detecting fraud than are auditors who are not prompted to reason strategically.

Gaining an accurate understanding of others' perspectives is crucial to successful strategic reasoning in an audit context. However, prior research has shown that individuals are not always successful in attaining an accurate perspective of others. Rizzolati and Craighero (2004) indicate that individuals use mirror neuron circuits to represent other people's minds using simulation of their own minds. Therefore, they rely on their own resources and experiences when attempting to take another's perspective. However, the absence of first-hand role-taking experience 'in the

shoes' of the observed target can lead to biases in perspective taking. Prior research has documented the existence of egocentric bias in perspective taking because people lacking role-taking experience tend to assume that others experience or see the world in a way similar to their own (e.g., Van Boven et al. 2000; Van Boven et al. 2005; Epley et al. 2004). Therefore, decision makers anchor on their own understanding of the world and fail to make sufficient adjustment to account for the differences between themselves and others (Tversky and Kahneman 1974). Carroll et al. (1988) show that decision makers display a persistent tendency to ignore the cognitions and the decision making processes of their opponents. Ochs (1995) shows that individuals who play the same role in a strategic game tend to focus on their own payoffs, ignoring others' incentives – the own-payoff effect. This tendency to fixate on one's own role and incentives while failing to incorporate others' perspectives has been replicated in different settings (Goeree and Holt 2001; Goeree et al. 2003). Research on strategic decision making has amply documented that in strategic interactions, decision makers fall prey to various egocentric biases, and ignore the perspectives of others (Bazerman et al. 2000).

Role-taking experience and perspective-taking ability

Role-taking theory was first developed by Mead (1934) and Moreno (1934, 1946). Role-taking theory focuses on the accuracy of attributed expectations of others' beliefs and behavior, and proposes that successful participation in interactions requires the ability to "take the role of the other" (Biddle 1986). The theory recognizes that the same individual might reason and act quite differently in different roles, and that different individuals may behave similarly in similar roles (Turner 2006). Cognitive psychology research grounded in the tradition of Piaget (1950, 1932) has long established the importance of role-taking experience as an antecedent of successful perspective taking (e.g., Feffer 1959).

The effects of role-taking experience on the ability to attain another's perspective have been extensively studied in cognitive and social psychology. Iannotti (1978) showed that role-taking experience significantly improves perspective-taking abilities in children. Results from that study also further highlighted the importance of perspective taking as a socio-cognitive skill (Iannotti 1978). Chandler (1973) found that role-taking experiences improve perspective-taking ability and reduce social egocentrism. Burns and Brainerd (1979) found that role-taking experiences improve cognitive, perceptual, and affective perspective-taking abilities in young children. Staub (1971) documented that role-taking experiences improve both cognitive perspective-taking and experiencing vicariously the emotions of others. Chalmers and Townsend (1990) also showed that role-taking experiences improve perspective-taking ability and understanding of the problems and incentives of others.

Role-taking experience has consequently been used across a variety of professional fields to aid professionals in acquiring the perspectives of important others (see Sogunro 2004 for a review). For example, role-taking experiences are used in medicine to facilitate problem-based learning (Jacobsen et al. 2006; Menahem and Paget 1990). Through role taking, individuals can experience concretely the interaction of interest from different angles (Johnson and Johnson 1997). Role taking constitutes an opportunity to examine and question one's assumptions about others and to develop a more accurate understanding of other people's roles and points of view (Ments 1999; Cranton 1992).

Role-taking experiences have been shown to reduce egocentric biases across various settings. Role reversal leads opponents to gain a clear understanding of the other's standpoint (Johnson 1967). In auctions, buyers who often fail to accurately understand the sellers' perspective make a large number of unacceptable bids (i.e., lower than sellers' threshold). This discrepancy occurs

because bidders fail to realize the presence of an endowment effect: people value an object higher once they own it (Kahneman et al. 1991). Van Boven et al. (2000) found that these egocentric biases can be removed by equipping individuals with the experience of being in another person's role. Letting each buyer have an experience as an owner of the object, without knowing its value, significantly reduced the number of unacceptable bids in that study. The role-taking experience helps buyers take the seller's perspective more accurately. By contrast, the same study finds that provision of knowledge about the endowment effect through lecturing (e.g., 'book knowledge') alone does not reduce buyers' egocentric bias. These findings highlight the importance of role-taking experience in improving perspective-taking ability and emphasize that role-taking experience cannot be substituted by second-hand encounters such as 'book' knowledge.

In auditing, strategic reasoning about the incentives and motivations of one's counterpart are especially important (Bloomfield 1995, 1997; King 2002). Role-taking experiences can lead the auditor to form an accurate mental representation of the client's incentives, options, and alternatives. Research on the effect of role-taking in the auditor-manager strategic interaction, however, has been very limited, and has focused on auditor-client negotiations. Trotman et al. (2005) examined the effect of a role-taking intervention on the persuasiveness of an auditor's argument in a negotiation with the client. The study found that auditors who have been exposed to a role-playing intervention by assuming the client's position in a mock negotiation, subsequently negotiate larger write-downs relative to auditors who have only passively considered the client's interests and options, or had negotiation experience in an auditor role. Trotman et al. (2005) also found that role-playing experience leads to an enhanced negotiation

process from the auditor's standpoint, as indicated by a greater level of satisfaction, perceived quality of communication, and strength of the relationship with the client.

Our paper complements the work of Trotman et al. (2005) by examining a very different aspect of the auditor-client interaction. While Trotman et al. examine the negotiation process, our study focuses on the quality of financial reporting as the joint outcome of the strategic choices of both managers and auditors. We examine the effect of role-taking on managers' decisions to report untruthfully, and on the auditor's abilities to accurately discern true earnings, based on the manager's report, and to contribute, in turn, to high financial reporting quality. While both Trotman et al. (2005) and our study propose that role taking improves perspective-taking ability, Trotman et al. (2005) focus on how auditors can better convince managers in discussing their preferred outcome, and we focus instead on how the accurate grasp of incentives and payoffs can improve auditors' ability to discern untruthful reporting and to contribute to the high quality of the financial statements. Further, we examine the effect of perspective-taking ability on both parties in the interaction, proposing that perspective-taking ability will also improve the truthfulness of managers' reports.

A more recent paper by Bowlin et al. (2009) shares one similarity with our experimental design, in that it examines the behavior of managers with prior experience as either auditors or managers. However, that study examines the behavior of managers in the auditor-manager interaction from a very different theoretical standpoint. Bowlin et al. (2009) do not study perspective-taking. Their paper uses social projection theory (Katz and Allport 1931; Krueger and Clement 1994; West 1996; Krueger 1998; Anderson and Camerer 2000) to examine the effect of different reporting regimes (strong-deterrent vs. weak-deterrent) on aggressive reporting by managers. Prior experience (auditor vs. manager) is studied as a moderating variable on the

effect of reporting regime on aggressive reporting: in a strong-deterrent regime, managers with no prior audit experience are found to report more aggressively than managers with prior audit experience. According to the theory used in the Bowlin et al. (2009) study, managers with no audit experience are "testing the waters" – that is, testing the auditor's monitoring ability in the strong-deterrent regime, but prior audit experience has the effect of suppressing participants' curiosity about others in that role.

A more important difference between Bowlin et al. (2009) and our study is that our study has the benchmark of true earnings. This enables us to examine normative vs. non-normative behavior by managers in the form of truthful vs. untruthful reporting, and by auditors in the form of contributing vs. failing to contribute to high-quality financial reporting. In contrast, Bowlin et al. (2009) define aggressive or cautious manager reporting only by manager's choice of a higher or lower payoff. Because there is no normative benchmark of 'true' earnings in their study, aggressive reporting is not untruthful or normatively incorrect, and cautious reporting is not truthful or closer to true earnings.[3]

In summary, while Bowlin et al. (2009) use social projection theory to make predictions about managers' curiosity and propensity to 'test the waters' in different reporting regimes, we use perspective-taking theory to make predictions about the cognitive effects of role-taking on both parties in the strategic interaction between auditors and managers. We are thus able to examine financial reporting quality as an output of the interactive decisions made by both auditors and managers. The literature on role-taking suggests that role-taking experiences would increase both auditors' and managers' perspective-taking ability, thereby improving each party's accuracy in understanding of the other party's incentives. Decision makers' first-hand awareness of their counterpart's incentives and strategies is expected to increase financial reporting quality.

Specifically, we expect that auditors exposed to a manager's perspective will adapt the context gained from previous exposures to generate hypotheses and solutions that are incrementally more accurate than those of auditors lacking exposure to a manager's perspective. The enhanced perspective-taking ability is expected to increase auditors' accuracy in discerning true earnings, conditional on managers' reports. It is also expected to improve auditors' ability to contribute to the high quality of financial reports. On the other hand, managers exposed to an auditor's perspective are expected to gain improved and accurate understanding of auditors' incentives to contribute to high financial reporting quality. They are therefore expected to issue more truthful financial reports.

The discussion above leads to the following hypotheses.

H1 Auditors with role-taking experience as managers are more accurate in estimating 'true' earnings conditional on managers' report than auditors with no role-taking experience as managers.

H2 Auditors with role-taking experience as managers are better able to contribute to high financial reporting quality than auditors with no role-taking experience as managers.

H3 Managers with role-taking experience as auditors will report more truthfully than managers with no role-taking experience as auditors.

Finally, we test whether the effects of role-taking experience are retained over time or diminish shortly after a decision-maker adopts a different role. This question is important because potential gains in audit effectiveness and efficiency could be lost if the effects of role-taking are transient. Our theory predicts that role-taking experiences will increase decision makers' ability to discern their counterpart's perspective. Thus, the ability to take another's perspective allows a person to cognitively place oneself in the other's 'shoes', to truly experience

the problem from another's viewpoint. This concept is fundamentally different from the concept of obtaining second-hand information or 'mechanical' knowledge about the other person's incentives, which can be easily forgotten. Because role-taking involves a personal experience of gaining another's perspective, we expect that its effects will not be immediately transient. The literature on perspective taking suggests that perspective taking provides individuals with a lasting ability to create better cognitive representations of others' minds (Galinsky and Moskowitz 2000; Davis et al. 1996). .

H4 The effects of role-taking are not immediately transient.

METHOD

Participants

A total of 88 students (45 male and 43 female) from a medium-sized private university participated in the experiment. Participants were recruited via email and flyers distributed on campus. The average age of participants was 21 years. Seventy percent of the participants were business majors; 97% were undergraduates.

Treatment

We manipulate role-taking by placing participants in the position of their counterparts. Our study examines the strategic interaction between auditors and managers that determines financial reporting quality. In employing a balanced design, we are able to observe both auditors' and managers' behavior. Participants in the study are assigned to one of four treatment groups. Participants in treatment group A act as managers in the first two rounds, and then switch their role to auditors in rounds 3 and 4. In treatment group B, participants act as managers in the first three rounds, and then switch role to auditors in round 4. Participants in treatment group C act as

auditors in the first three rounds, and then switch role to managers in round 4. Participants in group D act as auditors in the first two rounds, and then switch role to managers for rounds 3 and 4. The role assignments are shown in Table 1. We let managers and auditors switch roles at different rounds because we want to test (1) whether the extent of prior role-taking experience affects performance; (2) whether the effects of role-taking are transient over time. Different number of rounds in each role enables us to do these two tests.

[insert Table 1 here]

Procedure

Upon arrival, participants reported to one of two experimental rooms, to ensure that every participant was unaware of the identity of the other player in his/her pair throughout the experiment. Participants were then assigned a participant number. During the experiment, participants were identified only by their participant number, in order to protect the anonymity of all decisions made during the experiment.

In each room, participants read a consent form and were given an envelope with the experimental materials. Next, a researcher read aloud detailed instructions to the participants and provided examples. After reading the instructions, participants were allowed to ask the experimenter questions regarding the instructions privately. Participants could refer to the experimental instructions and the related examples throughout the experiment.

The four experimental rounds were played next. During each round, managers and auditors communicated with one another using communication sheets. Managers and auditors communicated with the cashier, who calculated their points at the end of each round, using feedback sheets. At the beginning of each round, participants were given their roles for the

round, and the commodity-related information for the round: managers received Integer I and Integer II, and auditors only received Integer I. Managers filled out a communication sheet with their reports of the commodity value, to be delivered by an experimental aide to an auditor in a different room. Managers also placed their feedback sheets in an envelope, to be delivered to the cashier.

Each auditor obtained a communication sheet from a manager located in a different room. Auditors made their decisions and recorded them in the communication sheets and in their own feedback sheets, which they placed in an envelope. The communication sheet and the envelope with the feedback sheet were then delivered by an experimental aide to the cashier. At the end of the round, the cashier calculated the points for each participant (managers and auditors), and recorded them on the participant's feedback sheet. The feedback sheets were then delivered to each participant. Participants were given some time to study their feedback sheets before the next round began.

Participants were paid at the end of the experiment. The compensation included a $5 show-up fee and performance-based payment. After the fourth round, one round was selected at random, and the performance-based payment was based on that round. Participants were paid $1 for every 3 points earned during the round.

Task and Materials

In our experiment, managers issued, and auditors received, a report of the value of a commodity in experimental currency, Lira. The actual commodity value is the sum of two randomly generated numbers, Integer I and Integer II, each generated from a uniform distribution ranging from 0 to 50. The actual commodity value changed for each round of the experiment.

The experiment consisted of four rounds, and at the beginning of each round, every participant was assigned either the role of sender of information (analog to a manager) or the role of receiver (analog to an auditor). Following the experimental economics tradition, we used the neutral sender/receiver terminology to guard against extraneous influences on role-playing, but for clarity and expositional convenience, we use the manager/auditor terminology in this manuscript (Haynes and Kachelmeier 1998; Bowlin et al. 2009).

Each manager was randomly paired with an auditor at the beginning of each round. The members of each pair were in different rooms and communicated with each other using a communication sheet.

Manager's Role

Managers reported to auditors the value of the commodity. Managers had information of both Integer I and Integer II. Regardless of the actual commodity value (the sum of Integer I and Integer II), managers could report any value from 0 to 100. The manager's reported value was passed on to the auditor, who in turn either accepted or rejected the manager's report. At the end of each round, the manager was informed of the points he or she accumulated in that round using a feedback sheet. Based on the points they received in the feedback sheet at the end of each round, managers were able to determine whether their report had been accepted or rejected by the auditor.

Manager's payoff (points) tree was based on the auditor's acceptance or rejection of the reported value, and is shown in Figure 1. If the auditor accepts the manager's report, the manager's payoff is the reported value. Otherwise, the manager's payoff is 65 percent of the

actual commodity value.[4] The payoff structure gave managers an incentive to report a high commodity value, but at the same time to have this report accepted by the auditor.[5]

[insert Figure 1 here.]

Auditor's Role

The role of the auditors was to make their own estimate of the commodity value in the experimental currency, and to make a decision whether to accept the reported value sent by the manager. Auditors were informed of Integer I but Integer II remained unknown to them. In each round, the auditor received a communication sheet from the manager, containing the manager's reported value. Thus, auditors made their decisions based on the following information: Integer I and managers' reported value. After receiving the communication sheet, the auditor made two decisions. Decision (1) was to make an autonomous estimate of the commodity value. Decision (2) was to either accept or reject the manager's reported value. At the end of each round, the auditor was informed of the decision points accumulated in that round via a feedback sheet.[6]

The auditor's payoff has two components: (1) the decision points, determined by whether the auditor has contributed to the high-quality of financial reporting; (2) the bonus points, determined by the accuracy of the auditor's own estimate of the actual commodity value. The auditor's payoff tree is shown in Figure 2, and the determination of financial reporting quality is shown in Figure 3. We explain the auditor's payoff first.

[insert Figure 2 here.]

If the auditor accepts the manager's reported value when the absolute value of the reporting difference D, defined as the difference between the manager's reported value and the actual commodity value, is not greater than 10 points (the acceptable margin of error in our study,

representing a materiality threshold), the auditor has contributed to high financial reporting quality. In this case, the auditor's payoff will be 50 decision points plus the bonus for accuracy. We assign the highest decision points payoff to this scenario in an attempt to model real-world economics: if the auditor accepts a manager's report that is not materially misstated, the auditor's payoff is the highest. If the auditor accepts the manager's report when the reporting difference is out of the range specified above (i.e., the report is materially misstated), the auditor has *not* contributed to high financial reporting quality. In this case, the auditor's payoff will be 0 decision points plus a bonus for accuracy. We assign the lowest decision points payoff to this scenario, because the auditor has accepted materially misstated financial reporting.

In cases where the auditor rejects the manager's reported value, whether or not the auditor has contributed to the high quality of financial reporting is jointly determined by: (1) whether the absolute value of the auditor's estimation error E, defined as the difference between the auditor's estimate and the actual commodity value, is within the acceptable margin of 10 points; (2) whether the absolute value of E exceeds the absolute value of D. If the absolute value of E does not exceed 10 points and the absolute value of D, the auditor has contributed to high-quality financial reporting in rejecting the manager's report. In all other cases, the auditor has *not* contributed to high-quality financial reporting. (We describe our reasoning for this classification shortly, in our discussion of Figure 3.) If the auditor rejects the manager's report and contributes to high-quality financial reporting, the auditor's payoff is 35 decision points plus a bonus for accuracy. The auditor's decision-points payoff in this case is smaller than the 50 points received if the auditor contributes to high financial reporting quality by accepting the manager's report. In this case, we model the economic consequences to the auditor from rejecting management's report (such as increased audit work, tension with the client management, potential future loss of

the client). If the auditor rejects the manager's report, but does not contribute to high financial reporting quality, the auditor receives a payoff of 5 decision points plus a bonus. In these cases, the auditor rejects the manager's report, but the auditor's own estimation is either far off from the true earnings, or worse than the manager's report. The payoff to the auditor is very low in this scenario, although it is still slightly better than the worst-case scenario in which the auditor accepts materially misstated financial statements.

Figure 3 shows how we determine whether the auditor has contributed to high financial reporting quality. The auditor's decision of whether to accept the manager's report determines the ultimate financial reports. In our experiment, if the auditor accepts the manager's reported value, the manager's reported value becomes the amount reported in the financial statements. However, if the auditor rejects the manager's reported value, the auditor's own estimate is used as the amount reported in the financial statements. Thus, if the auditor accepts the manager's report, the financial reports are based on the manager's report. However, if the auditor rejects the manager's report, financial reporting is based on the auditor's own estimate of 'true' earnings.[7]

If the auditor accepts the manager's report and the manager's report is within the acceptable margin of error, the auditor has contributed to high financial reporting quality. However, if auditor accepts the manager's report when the report is outside of the acceptable margin of error, the financial statements are materially misstated, and the auditor has *not* contributed to high reporting quality.

[insert Figure 3 here.]

If the auditor rejects the manager's report, financial reporting is based on the auditor's own estimate of true earnings. In this case, if the auditor's estimate is both within the acceptable

margin of error and better than the manager's report, the auditor has contributed to high financial reporting quality.[8] If the auditor's estimate is outside the acceptable margin of error, the auditor has *not* contributed to high financial reporting quality, because the financial statements are materially misstated. If the auditor's estimate is within the acceptable margin of error, but the auditor's own estimate is worse than the manager's report, the auditor has not contributed to high financial reporting quality, because the auditor has 'frivolously' rejected the manager's report. The rejection is frivolous because the auditor rejects manager's reported earnings without being able to provide a better report of true earnings himself.

The auditor's estimate of the commodity value was used to calculate bonus points for the accuracy of the auditor's estimate. The bonus points would not be revealed to the auditor until the end of the experiment.

Experimental Design

At the beginning of the experiment, participants were randomly assigned to one of four groups: A, B, C, or D. At the beginning of each of the four experimental rounds, participants were randomly assigned to form pairs; each participant could thus have up to four different counterparts in the experiment. At the beginning of each round, participants learned their role for the round – manager or auditor.

Participants in groups A and B were paired with participants in groups D and C, respectively. Groups A and B were in one experimental room, and groups C and D were in a second experimental room. The roles assigned to participants in each group are shown in Table 1.

RESULTS

In rounds 1 and 2 of our study, participants gained experience as either managers or auditors. We test our hypothesized predictions about the effects of role-taking experience on auditors' and managers' behavior in round 3 of the game, conditional on the roles participants have played in the first two rounds of the game.[9] We also examine: (1) whether role-taking experience improves auditors' and managers' performance compared to a benchmark of no experience; (2) whether the extent of role-taking experience affects auditors' and managers' performance; (3) whether the effects of role-taking experience are immediately transient. We use data from rounds 1, 3 and 4 for these analyses.

Hypothesis 1

H1 proposed that role-taking experience increases the auditors' accuracy in estimating true earnings, conditional on managers' reports. We expect that auditors who had previously taken the role of managers are more accurate in estimating the commodity value, based on the manager's reported value, than auditors who had not taken the manager's role. To test H1, we used the two groups who act as auditors in the third round. We conducted an ANOVA with the auditor's estimation error E for round 3 as the dependent variable, and the exposure to managers' role as the independent variable. The auditor's estimation error is calculated as the absolute value of the difference between the auditor's estimate of the commodity value and the actual commodity value. The auditor's estimation error does not measure the decision taken by the auditor whether to accept or reject the manager's reported value – it only measures the auditor's ability to discern 'true' earnings, regardless of whether the auditor chooses to accept or reject management's report. Results are shown in Table 2.

[insert Table 2 here.]

The mean estimation error of auditors who have taken a manager's role in prior rounds is 6.05, while the mean estimation error of auditors with no role-taking experience is 11.36 (Panel A). Role-taking increases auditor's accuracy in discerning true earnings, significant at a p-value of 0.003 (one-tailed) and H1 is supported.[10]

Hypothesis 2

H2 proposed that auditors with role-taking experience as managers are better able to contribute to high financial reporting quality than auditors with no role-taking experience as managers. We perform a logistic regression in which the dependent variable is the auditor's ability to contribute to high financial reporting quality, and the independent variable is the auditor's prior role-taking experience as a manager or auditor. The auditor's ability to contribute to high financial reporting quality is a binary variable, coded 1 if the auditor was able to contribute to the high quality of financial reporting, and zero otherwise. The decision tree determining whether the auditor has contributed to high financial reporting quality is shown in Figure 3. The auditor is able to contribute to high financial reporting quality if: (a) the auditor accepts the manager's report when the manager's reporting difference is within the acceptable margin of error, or (b) the auditor rejects the manager's report when the auditor's own estimate of true earnings is both within the acceptable margin of error and more accurate than the manager's report.

Results are shown in Table 3.

[insert Table 3 here.]

Auditors who have not taken a manager's role in prior rounds are able to contribute to high financial reporting quality in about half the cases (11 out of 22 times), while auditors who have previously taken the role of a manager are able to contribute to high financial reporting quality in 17 out of 22 cases. Role-taking increases the auditors' ability to contribute to high quality of financial reporting; this effect is significant at 0.033 (one-tailed), supporting H2.[11]

Hypothesis 3

H3 proposed that managers with role-taking experience as auditors will report more truthfully than managers with no role-taking experience as auditors. We expected that the reported values submitted by managers exposed to an auditor's perspective would be closer to the true commodity value than the reported values of managers exposed only to a manager's perspective. To test this hypothesis, we used the groups who act as managers in the third round. We conducted an ANOVA with the reporting difference D (the absolute value of the difference between the actual commodity value and the reported commodity value) as the dependent variable and role-taking experience as the independent variable. Results are presented in Table 4.

[insert Table 4 here.]

Given the incentives in our experimental design, we expected managers to inflate, rather than deflate, their earnings reports. Although in our study we measure truthful reporting with the absolute value of the reporting difference D, we examined the data to evaluate the tendency in managers' reports. Importantly, there were no occurrences of under-reporting in any of the rounds in our study, with all managers either reporting truthfully or over-reporting the commodity values.

Panel A of Table 4 shows that the mean reporting difference for managers exposed to an auditor's perspective (6.45) is lower than the reporting difference for managers exposed to a manager's perspective only (11.14). Managers who have taken an auditor's role are less prone to inflating their reports. Panel B shows that this effect is significant at a p-value of 0.012 (one-tailed), and H3 is supported.

Hypothesis 4

H4 predicted that the effects of role-taking will not be immediately transient. To test this hypothesis, we examine whether the effect of role-taking diminishes in one additional round of the game. Results are shown in Table 5.

[insert Table 5 here.]

First, we examine auditors' accuracy in estimating the underlying 'true' earnings, conditional on seeing management's report. We compare the estimation errors in round 3 and 4 for auditors in group A. Panel A of Table 5 reveals no significant difference in auditors' accuracy between the two rounds (p-value of 0.373, two-tailed). The results for auditors' ability to contribute to high financial reporting quality are shown in Panel B of Table 5. The insignificant coefficient on round (p-value of 0.728, two-tailed) indicates that auditors' ability to contribute to high financial reporting quality, gained through role-taking experience, is not immediately transient.

Next, we examine whether managers who have been exposed to an auditor's perspective will continue to report more truthfully past their first experience in the new role – that is, the effect of role-taking will not fade away immediately. We compare the reporting difference in rounds 3 and 4 for managers in group D. Panel C of Table 5 shows that round has no significant effect on

managers' reporting performance (p-value of 0.484, two-tailed). Collectively, these results provide support for H4.

ADDITIONAL ANALYSES

Prior experience in the counterpart's role vs. no experience

Our main tests examined the effect of role-taking in round 3 of the game, comparing groups A and C to examine auditors' behavior, and comparing groups B and D to examine managers' behavior. As a robustness test, we examine the effect of role-taking as compared to a different benchmark—we compare: (1) auditors with role-taking experience as managers (round 3, group A) to auditors with *no* prior experience (round 1, group C), and (2) managers with role-taking experience as auditors (round 3, group D) to managers with *no* prior experience (round 1, group B).[12] We find that auditors with prior role-taking experience are more accurate in estimating the underlying 'true' earnings, conditional on seeing management's report, than auditors with no experience. The mean estimation error of auditors with prior role-taking experience (6.05) was lower than that of auditors with no experience (17.50), significant at a p-value < 0.001 (one-tailed). Further, we find that auditors with prior role-taking experience are also more likely to contribute to high financial reporting quality than auditors with no prior experience. Auditors with prior role-taking experience were able to contribute to high financial reporting quality in 17 out of 22 cases, while auditors with no experience were able to contribute to high reporting quality in only 9 out of 22 cases. A logistic regression shows that this difference is significant (p < 0.009, one-tailed). Finally, we find that the mean reporting difference for managers with role-taking experience (6.45) is approximately one-third of the reporting difference for managers with

no experience (18.95). Managers with role-taking experience as auditors are more likely to report truthfully than managers with no experience (p-value of 0.002, one-tailed).

Does the extent of prior role-taking experience affect performance?

We examine whether the extent of prior role-taking experience affects auditors' and managers' performance. In this test, we focus on whether acquiring the perspective of one's counterpart would improve incrementally by additional time spent in the counterpart's 'shoes'. We first examine the behavior of auditors, comparing the judgment of auditors with two rounds of role-taking experience as managers (round 3, group A) to that of auditors with three rounds of prior role-taking experience as managers (round 4, group B). The result shows that auditors with three rounds of role-taking experience are not more accurate in estimating the underlying 'true' earnings, conditional on seeing management's report, than auditors with only two rounds of role-taking experience (p-value of 0.137, two-tailed). The result shows that auditors with three rounds of prior role-taking experience as managers are not more likely to contribute to high financial reporting quality than auditors with only two rounds of role-taking experience (p-value of 0.117, two-tailed).

We also compare the performance of managers with two rounds of role-taking experience as auditors (round 3, group D) to that of managers with three rounds of prior role-taking experience as auditors (round 4, group C). The result shows that managers with three rounds of prior role-taking experience as auditors are not more truthful in their reports than managers with only two rounds of role-taking experience as auditors (p-value of 0.172, two-tailed). In summary, our results suggest that, given exposure to the counterpart's role and perspective has occurred, additional role-taking experience does not incrementally improve performance.

DISCUSSION AND CONCLUSIONS

In this study we examine the effect of role-taking experience in the role of one's counterpart on both managers' and auditors' performance in contributing to the quality of financial reporting. We find that experience in the role of their counterparts improves the performance of both managers and auditors, and results in higher financial reporting quality. Specifically, managers with prior role-taking experience as auditors issue more truthful financial reports than managers without role-taking experience. In turn, auditors who have taken a manager's role are more accurate in estimating 'true' earnings conditional on managers' report than auditors with no role-taking experience as managers. Also, auditors with role-taking experience as managers are better able to contribute to high financial reporting quality than auditors with no role-taking experience. Finally, our results suggest that the beneficial effects of role-taking experience on financial reporting quality are not likely to dissipate immediately.

Taken together, these results suggest that auditors' role-taking experience as managers would improve their ability to take a manager's perspective and would, in turn, increase financial reporting quality. Audit firms increasingly recruit former employees through their extensive alumni networks and hire them as "boomerangs" (The Economist 2006, 2007; Zimmerman 2008). Findings from our study suggest that audit firms may enhance the effectiveness of audits by increasing the hiring of such "boomerang" auditors with previous management experience. Moreover, as suggested by previous audit research, audit firms may take advantage of the benefits of internalized experience at a relatively low cost, through training in which audit team members engage in role-playing (Trotman et al. 2005). Furthermore, our finding that managers without prior audit experience are likely to report less truthfully than managers with no prior

audit experience may be informative to regulators such as the PCAOB with respect to their annual inspections selections.

Our study is subject to several limitations. First, our experiment abstracts away from a specific audit context, which could make it difficult to draw real-world implications. However, the experimental task incorporates the key features of the auditor-manager interaction and the incentive structure reflects both auditors' and managers' incentives, similar to previous research in this area (e.g., Haynes and Kachelmeier 1998; Bowlin et al. 2009). Second, due to limitation of time and resources, we only observe the impact of experience in the counterparty's role in a relatively short period. Although our findings indicate that the positive effect of prior experience on perspective taking is unlikely to fade away fast, longitudinal studies spanning a longer timeline may provide a clearer answer to whether internalized experience can significantly deteriorate over time. Lastly, our study does not investigate how to gain the ability to take others' perspective besides taking others' role. A promising avenue for future research includes studying what factors may help decision-makers to gain the ability to take others' perspective without having to work in the others' role. Future research can also identify boundary conditions to the usefulness of role-taking experience in perspective taking as well as environmental factors in the audit context that may boost its significance.

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FIGURE 1. Manager's Payoff Tree

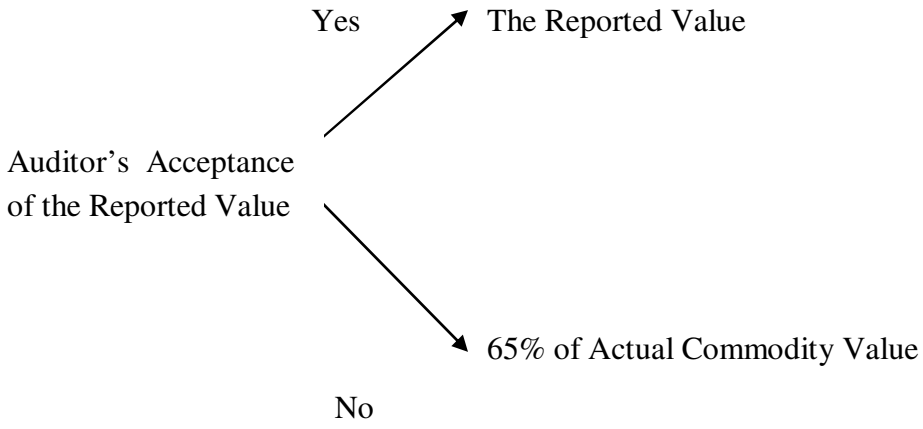
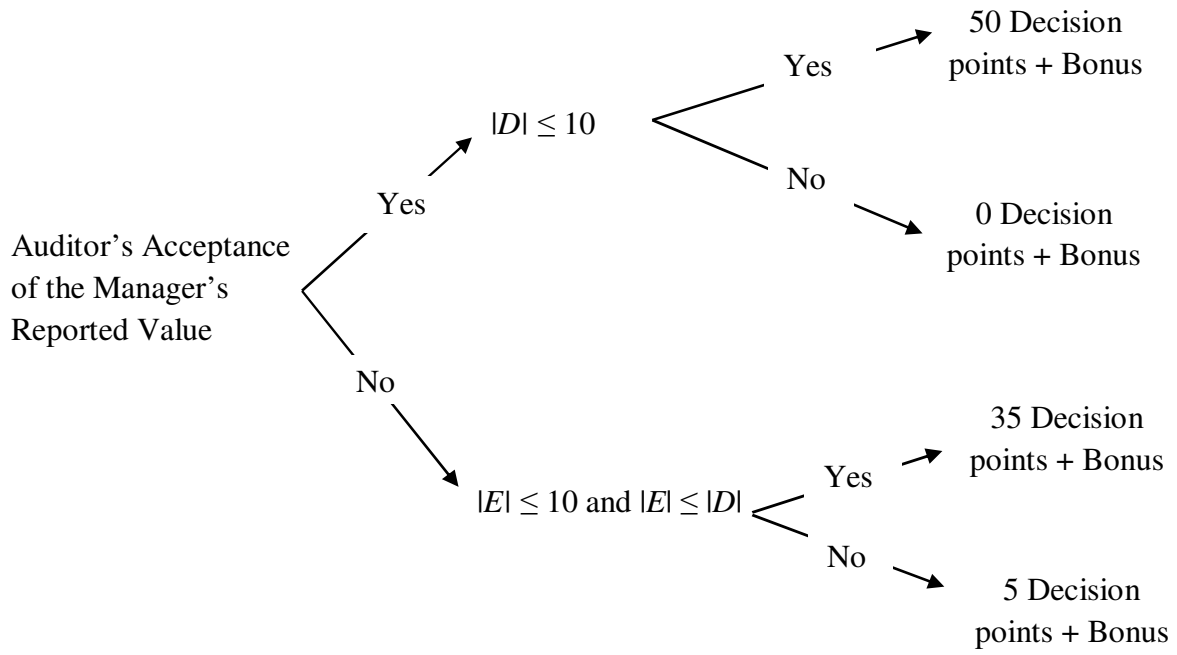


FIGURE 2. Auditor's Payoff Tree



D (Manager's Reporting Difference) = Reported Commodity Value – Actual Commodity Value

E (Auditor's Estimation Error) = Estimated Commodity Value – Actual Commodity Value

Bonus = (100 - | Auditor's Own Estimate – Actual Commodity Value|)/10.

FIGURE 3. Auditor's Contribution to Financial Reporting Quality

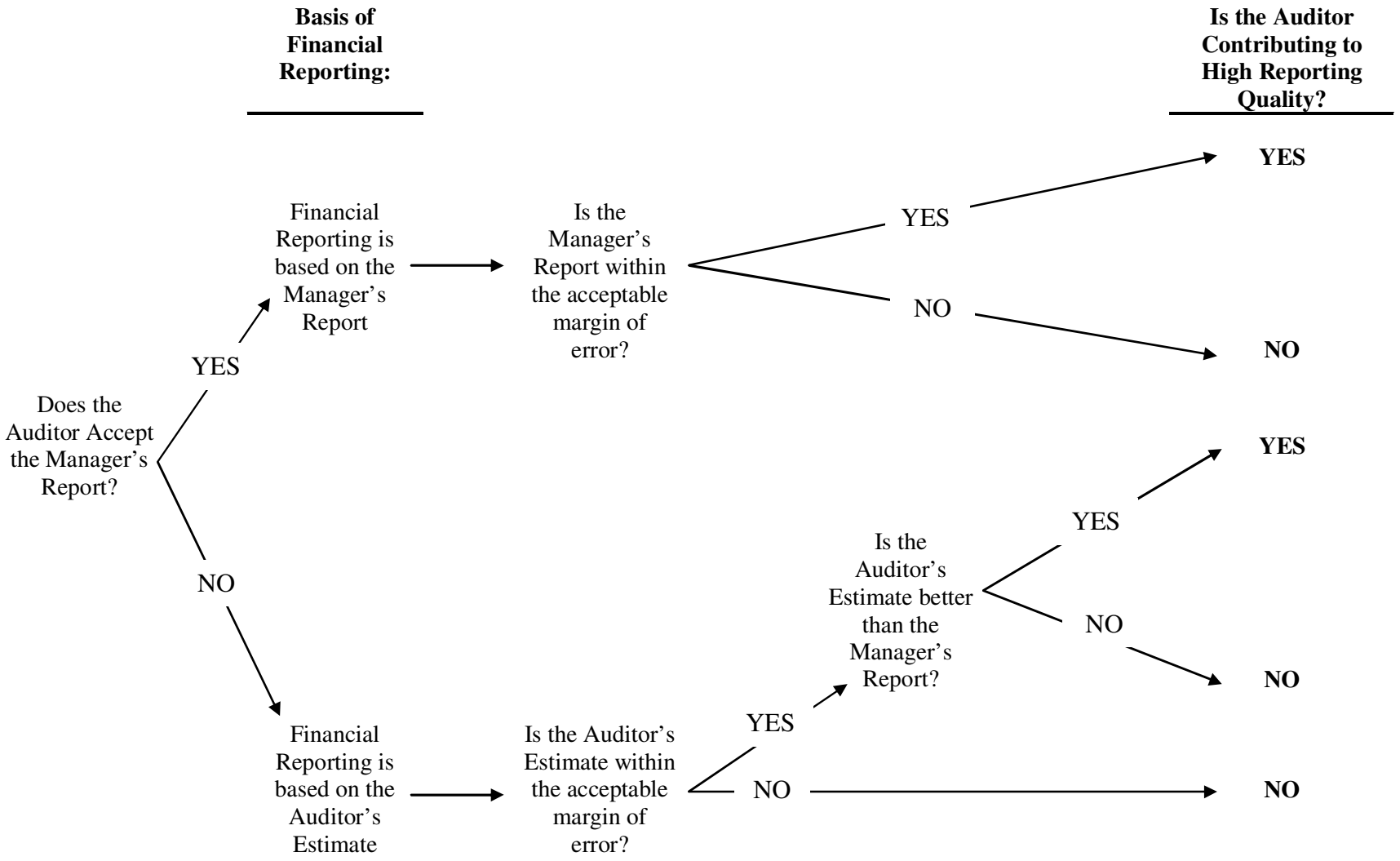


TABLE 1. Participants' role by round

Group	Round 1	Round 2	Round 3	Round 4
A	Manager	Manager	Auditor	Auditor
B	Manager	Manager	Manager	Auditor
C	Auditor	Auditor	Auditor	Manager
D	Auditor	Auditor	Manager	Manager

TABLE 2. Effect of role-taking on auditor's accuracy in estimating 'true' earnings conditional on managers' report[a]

PANEL A. Descriptive statistics

Auditor Group	Mean	Std. Deviation	N
Taken a manager's role	6.05	5.83	22
Not taken a manager's role	11.36	6.54	22
Total	8.70	6.68	44

PANEL B. ANOVA

Source	SS	df	MS	F	Sig.[b]
Intercept	3333.84	1.00	3333.84	86.97	*.000*
Role-taking	311.11	1.00	311.11	8.12	*.003*
Error	1610.05	42.00	38.33		
Total	5255.00	44.00			

[a] Ability to detect earnings management is measured by the auditor's estimation error, calculated as: Auditor's Own Estimate – Actual Commodity Value.

[b] Tests of directional expectations are one-tailed.

TABLE 3. Effect of role-taking on auditor's ability to contribute to high financial reporting quality[a]

PANEL A. Descriptive statistics

	Auditor contribution to high financial reporting quality		
Auditor Group	**No**	**Yes**	**Total**
Taken a manager's role	5	17	22
Not taken a manager's role	11	11	22
Total	16	28	44

PANEL B. Logistic regression for auditor's ability to contribute to high financial reporting quality

	Coefficient	**S.E.**	**Wald**	**df**	**Sig.[b]**
Intercept	-1.836	.792	5.367	1	.021
Role-taking	.612	.332	3.399	1	.033

[a] Auditor's ability to contribute to high financial reporting quality is measured on a binary scale: 1 if the auditor contributed to high financial reporting quality according to the decision tree in Figure 3, and 0 (zero) otherwise. The auditor has contributed to high financial reporting quality if: (a) the auditor accepts the manager's report when the manager's reporting difference is within the acceptable margin of error, or (b) the auditor rejects the manager's report when the auditor's own estimate of true earnings is more accurate than the manager's report and the auditor's estimate is within the acceptable margin of error.

[b] Tests of directional expectations are one-tailed.

TABLE 4. Effect of role-taking on truthful reporting by managers[a]

PANEL A. Descriptive statistics

Manager Group	Mean	Std. Deviation	N
Taken an auditor's role	6.45	5.49	22
Not taken an auditor's role	11.14	7.67	22
Total	8.80	7.00	44

PANEL B. ANOVA

Source	SS	df	MS	F	Sig.[b]
Intercept	3403.84	1	3403.84	76.53	*.000*
Role-taking	241.11	1	241.11	5.42	*.012*
Error	1868.05	42	44.48		
Total	5513.00	44			

[a] Truthful reporting is measured by the absolute value of managers' reporting difference D, calculated as the reported commodity value minus the actual commodity value.

[b] Tests of directional expectations are one-tailed.

TABLE 5. Are the effects of role-taking immediately transient?

PANEL A. Do the effects of role-taking persist in an additional round – Auditors' Estimation Error

Source	SS	df	MS	F	Sig.
Intercept	2086.57	1	2086.57	54.46	*0.000*
Round	31.11	1	31.11	0.81	*0.373*
Error	1609.32	42	38.32		
Total	3727.00	44			

PANEL B. Do the effects of role-taking persist in an additional round – Logistic regression for auditor's ability to contribute to high financial reporting quality

	Coefficient	S.E.	Wald	df	Sig.[b]
Intercept	1.95	2.49	0.61	1	*0.433*
Round	-0.24	0.70	0.12	1	*0.728*

PANEL C. Do the effects of role-taking persist in an additional round – Managers' Aggressive Reporting[c]

Source	SS	df	MS	F	Sig.[b]
Intercept	1489.45	1	1489.45	41.68	*0.000*
Round	17.82	1	17.82	0.50	*0.484*
Error	1500.73	42	35.73		
Total	3008.00	44			

[a] Ability to detect earnings management is measured by the auditor's estimation error, calculated as: Auditor's Own Estimate – Actual Commodity Value.

[b] Tests of directional expectations are one-tailed.

[c] Aggressive reporting is measured as the difference between the actual commodity value and the reported commodity value.

ENDNOTES

[1] We hold management tools to manipulate earnings constant because we focus on how role-taking experience helps auditors understand accurately managers' incentives, and further whether the enhanced understanding of managers' incentives improves auditors' ability to contribute to high financial reporting quality.

[2] Our findings also hold if we change the control group to auditors with no prior experience of any kind.

[3] Bowlin et al. (2009) also find that managers who have been diligent auditors in their prior role are more sensitive to the type of regime than managers who have been lax auditors. There is no equivalent to the auditor diligence variable in our study, due to the lack of a normative benchmark for what constitutes a 'diligent' auditor in Bowlin et al. (2009).

[4] We model in our design the real-life costs to managers from auditor rejection – even if the manager reports true earnings, since true earnings are not observable to the auditor, if an auditor perceives that a manager is misreporting, the manager will suffer costs.

[5] Managers have incentives to inflate as well as deflate earnings. In this study, we focus on income-increasing earnings management because regulators and investors have more concerns on income-increasing manipulations.

[6] Auditors receive feedback about their decisions through the decision points.

[7] We model this in our experiment by basing the auditor's payoff on the manager's reporting difference in case the auditor accepts the manager's report, and basing the auditor's payoff on the auditor's own estimate as well as the manager's reporting difference in case the auditor rejects the manager's report.

[8] If both the auditor's estimate and the manager's report are within the margin of error, but the auditor's own estimate is closer to true earnings, the auditor has still successfully played a role in improving the quality of the financial reports. In this case, the auditor has not frivolously rejected the manager's report, but has rejected the report based on the superiority of his/her own earnings estimate.

[9] The purpose of the first two rounds is to enable us to manipulate role-taking experience between participants.

[10] We also conducted an analysis that controlled for managers' reported value. Our results remain the same after controlling for managers' reported value, and the reported value is not significant as a covariate in this analysis.

[11] We also ran a logistic regression that controlled for managers' reported value. Our results remain the same after controlling for managers' reported value, and the reported value is not significant as a covariate in the regression. We also ran a logistic regression that controlled for

the true commodity value, and found that auditors' decisions are significantly and positively associated with the managers' reporting difference D, but not with the actual commodity value.

[12] We obtain similar results if we use as benchmark for participants with no experience: (1) round 1, group D for auditors, and (2) round 1, group A for managers.