

Conflict of interest and the intrusion of bias

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Abstract

This paper explores the psychology of conflict of interest by investigating how conflicting interests affect both public statements and private judgments. The results suggest that judgments are easily influenced by affiliation with interested partisans, and that this influence extends to judgments made with clear incentives for objectivity. The consistency we observe between public and private judgments indicates that participants believed their biased assessments. Our results suggest that the psychology of conflict of interest is at odds with the way economists and policy makers routinely think about the problem. We conclude by exploring implications of this finding for professional conduct and public policy.

Keywords: conflict of interest, self-serving bias, motivated reasoning.

1 Introduction

In many situations, professionals are called upon to play dual roles that require different perspectives. For example, attorneys embroiled in pretrial negotiations may exaggerate their chances of winning in court to extract concessions from the other side. But when it comes time to advise the client on whether to accept a settlement offer, the client needs objective advice. Professors, likewise, have to evaluate the performance of graduate students and provide them with both encouragement and criticism. But public criticism is less helpful when faculty serve as their students' advocates in the job market. And, although auditors have a legal responsibility to judge the accuracy of their clients' financial accounting, the way to win a client's business is not by stressing one's legal obligation to independence, but by emphasizing the helpfulness and accommodation one can provide. Traditional economic models of rationality would assume that people can perform optimally in such situations, making unbiased judgments when it is in their interest to do so, but taking a partisan stand when this is called for strategically. This paper asks whether these dual roles are psychologically feasible; that is, can one person successfully play different roles that require different, and often competing, per-

spectives? In our attempt to answer this question, we explore the psychology of conflict of interest by comparing alternative explanations for their effects.

After reviewing research on whether and when people are able to play dual roles, we present findings from three studies. These studies examine a fairly typical business situation — a situation in which an advocate must provide a deliberately partisan valuation of a company and then is asked to provide an impartial valuation of the same company. We ask whether these advocates can successfully make impartial, unbiased judgments in situations characterized by such dual roles. We conclude by speculating about the implications of this psychological finding to issues of professional conduct, public policy, governmental regulation, and organizational design.

1.1 Background

F. Scott Fitzgerald wrote that “the test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function” (1936). However, evidence suggests that even the most intelligent find it difficult to sustain opposing beliefs without the two influencing each other.

Because professionals are so frequently called upon to fulfill multiple roles, it is easy to find instances where their different roles demand that they pursue conflicting objectives. Although it might seem desirable that multiple aspects of the self inform each other in judgment and choice, such mutual influence also undermines people's ability to play multiple roles. People's inability to switch between roles without having them influence each other can partly explain the corrosive effect of conflicts of interest on professional judgment. The auditor who desperately wants to retain a client's business may have trouble

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adopting the perspective of a dispassionate referee when it comes time to prepare a formal evaluation of the client's accounting practices.

When people become aware that they have behaved in ways that are inconsistent with the beliefs they have professed, they are motivated to resolve the inconsistency. The simplest resolution is often to revise their beliefs, given that their previous behavior cannot be changed (Festinger & Carlsmith, 1959). In this way, actions taken or decisions made in a partisan role may directly influence private beliefs because people will bring their beliefs into line with stances they have previously taken. The alternative is to believe that one is a hypocrite — willing to say one thing when one's role demands it and then contradict that same conclusion in a different context.

1.2 Selective accessibility

Recent research has demonstrated how the selective accessibility of information in memory produces an anchoring effect (Mussweiler & Strack, 1999; Strack & Mussweiler, 1997). This is because people consider (however briefly) the hypothesis that the anchor value is the correct answer. Applied to the conflicting interests of dual roles, this would imply that arguments made in the first role become more accessible in memory, and that this information will influence subsequent judgments. For example, after arguing that an audit client should retain her firm because she can help increase the client's probability of success, an auditor is likely to be influenced by those thoughts and those reasons when it comes time to complete a formal audit report regarding the client's continued viability as a going concern.

In the case of conflicting dual roles, the selective accessibility of arguments on one side of an issue is likely to be particularly important. Thanks to what Perkins (1989) called the "myside" bias, people quite naturally think of arguments that favor the position they have taken or the outcome they desire. On the other hand, considering the opposite perspective does not come as naturally (Brenner, Koehler, & Tversky, 1996). The selective accessibility of this one-sided evidence is likely to stack the deck in favor of a particular conclusion when the individual then attempts to take a more dispassionate perspective.

The evidence indicates that these selective attentional or memorial processes operate largely outside of conscious awareness. People are not aware of the ways in which exposure to anchors can bias subsequent judgments (Chapman & Johnson, 1999). Indeed, if they were, then people could consciously counteract the biasing effect of irrelevant or misleading anchors, but they don't (Mussweiler, Strack, & Pfeiffer, 2000). Such lack of insight into their own cognitive processes makes it difficult

for people to purge biasing influences from their judgments even when they desire to do so.

1.3 The studies

The three experiments reported here bring the research on role-conferred biases to bear on the study of conflict of interest. Experiment 1 presents data from professional auditors to test the hypothesis that their judgments are biased in favor of the firms that have hired them (**Hypothesis 1**). The second and third studies examine the causes behind this effect by looking at factors that could moderate the magnitude of bias and testing the extent to which the bias can be consciously undone. Both Experiments 2 and 3 ask participants to take on the roles of both an advocate and a judge. Both experiments find support for the hypothesis that people's roles as advocates lead to biases in their judgments when they later attempt to fulfill the role of an objective judge. Participants were asked to produce two judgments: one public and one private. For the public judgments, participants were given an explicit incentive to be biased. For the private judgments, they were given an incentive to be unbiased; they were paid on the basis of how close their judgments came to those provided by an impartial panel of experts. If participants were properly motivated and fully aware of the bias in their public reports, they should have been able to adjust their evaluations to eliminate the bias in their private judgments. If they were not fully aware of the bias, as the research on role-conferred bias would suggest, then their private estimates should have been biased as well (**Hypothesis 2**).

Because monetary incentives are a common source of conflicting interest between roles, Experiment 2 specifically tests the consequences of financial incentives on bias. Experiment 2 tests the hypothesis that the greater one's financial interest in a particular outcome, the more biased one will be in the direction of that outcome (**Hypothesis 3**).

Material interests are not the only factors that can introduce conflicts of interest. Personal affiliations can have a similar effect. The third experiment varies the closeness of the relationship between the agent and the client. Prior evidence suggests that personal affiliations, in the absence of any monetary incentive, are likely to be sufficient to produce bias in judgment (Hastorf & Cantril, 1954; Thompson, 1995). Naturally, this tendency is strengthened only when people feel accountable to a partisan (Lerner & Tetlock, 1999; Tetlock, 1992). Both close personal affiliations and accountability strengthen the biasing effect of the advocate role and are therefore likely to make it more difficult to eradicate biasing influence when it comes time to play the role of neutral judge. Experi-

ment 3 tests the hypothesis that the closer one's personal relationship with a particular individual, the more biased one will be in that person's favor (**Hypothesis 4**).

2 Experiment 1: Role-conferred biases

Professional auditing is full of ambiguous situations that require auditors to exercise professional judgment. For example US Generally Accepted Accounting Principles (GAAP) require accountants to estimate "fair values" for assets that lack observable prices. This is especially true for so-called "Level 3" assets that do not trade frequently, and whose valuations must be based on assumptions or expectations. It is rare, however, that auditors have to come up with an independent valuation. Instead, the audit client proposes an accounting and the auditor's only job is to decide whether to bless the client's approach as consistent with GAAP. Psychologically, this arrangement raises the concern that people are less bound by objectivity when they need only acquiesce to someone else's biased and self-serving judgments than when they are called on to make an independent evaluation (Dana, Weber, & Kuang, 2007; Diekmann, Samuels, Ross, & Bazerman, 1997). In order to explore this issue, we vary the question order in this experiment. Some participants first decide whether to approve the client's accounting; others must make their own valuations first.

2.1 Method

Participants were 139 professional auditors employed full-time by one of the Big Four accounting firms in the United States. Their ages ranged from 23 to 55, with a mean of 29 years ($SD = 6.2$). Fifty-six percent of the participants were male. They had a mean of five years ($SD = 5.7$) working as an auditor. After handing in their questionnaires, nine participants requested that their responses be excluded from subsequent data analyses.

Each participant read five different auditing vignettes and came to a judgment regarding the proper auditing in each case. The problems were intentionally chosen to be somewhat difficult accounting problems for which GAAP did not provide an unambiguous solution. Each of the vignettes depicts a situation in which the accounting issues are not clearly addressed by current rule-based accounting standards. The issues addressed include the recognition of intangible assets (in particular, goodwill) on the financial statements (vignette 1), the restructuring of debt with dilutive securities (vignette 2), the recognition vs. deferral of revenues (vignette 3), capitalization vs. expensing of expenditures (vignette 4), and the treat-

ment of research and development costs on the financial statements (vignette 5). Participants were told that these cases were independent of each other and hypothetical, although intended to be realistic. All participants saw all five vignettes in the same order. The five vignettes are listed in Appendix A.

The experiment had a 2 (role: hired by target firm or by outside investor) X 2 (question order: make accounting valuation first vs. assess others' accounting first) between-participants factorial design. The role manipulation varied whom participants were told they were working for. Half the participants' materials told them that they had been hired as the external auditor for the firm in question. Obviously, the firm in question would prefer a more positive audit opinion. The other half of participants read that they were working for an outside investor considering investing money in the firm. An outside investor is likely to want to know the true state of the firm's finances when deciding whether to invest.

The question order manipulation counterbalanced the order of the questions that followed every vignette. Those in the assessment-first condition were first presented with (1) the firm's unaudited accounting, and were asked whether they would accept it as complying with GAAP; and (2) what the right accounting would be. Those in the valuation-first condition got these two questions in the reverse order.

2.2 Results

Neither age nor years of auditing experience affected the dependent measures reported below. Therefore, we do not report them in the subsequent analyses.

We hypothesized that participants would be more likely to conclude that the accounting behind a firm's financial reports complied with GAAP if they were working for the firm than for an outside investor (Hypothesis 1). To test this hypothesis, we averaged the rate of approval for each participant over the five vignettes and submitted it to a 2 (role: hired by target firm or by outside investor) X 2 (question order: make accounting valuation first vs. assess other's accounting first) ANOVA. The main effect of role emerges as significant. Consistent with Hypothesis 1, those working as external auditor for a firm were significantly more likely to approve the firm's accounting (*Mean rate of approval* = 29%, $SD = 24%$) than were those who represented outside investors ($M = 21%$, $SD = 19%$), $F(1, 126) = 4.45$, $p = .037$. Neither the main effect of question order nor its interaction with role is significant ($F < 1$).

We also expected that, in addition to being more willing to endorse the firm's own accounting, participants would be more likely to come to valuation decisions that

were favorable to the target firm when considering the problem from the perspective of an outside auditor than when taking the perspective of a potential investor. To test this prediction, we first generated standardized scores for each item by computing a z-score of the valuation for each vignette and reverse-scoring as appropriate so that higher scores indicated valuations more favorable to the target firm. We then computed an average valuation for each participant and submitted these valuations to a 2 (role: hired by target firm or by outside investor) X 2 (question order: make accounting valuation first vs. assess other's accounting first) ANOVA. Those serving the firm as outside auditors came to more favorable valuations ($M = .07$, $SD = .56$) than did those working for a potential investor ($M = -.10$, $SD = .49$), but this effect does not attain statistical significance, $F(1,125) = 4.07$, $p = .081$.

Neither the main effect of question order nor its interaction with role attained statistical significance.

2.3 Discussion

The results of Experiment 1 are broadly consistent with research on accountability showing that people tend to be proactively responsive to those to whom they expect to be accountable. When people are accountable to others with known preferences, their judgments tend to assimilate to those preferences (Tetlock, 1983). An auditor who feels accountable to the client is more likely to issue a favorable audit report than one who feels accountable to others within his or her own firm (Buchman, Tetlock, & Reed, 1996). However, it is worth noting that the role manipulation used in Experiment 1 was weak compared with the standard accountability manipulations in which people are led to believe that they will actually be meeting with a real person to whom they will need to justify their decisions. In Experiment 1, no mention was made of such accountability and participants were not required to justify their opinions. Nevertheless, this weak manipulation had an effect. We speculate that one reason for its effectiveness may be that the participants were familiar with the role of auditor and were able to easily put themselves in the role of being employed by, and accountable to, the client firm.

One notable feature of the results of Experiment 1 is the low levels of endorsement. Nearly three quarters of the time, participants rejected the accounting proposed in the vignette as not complying with GAAP. This stands in contrast to the fact that the vast majority of audit reports are unqualified endorsements of the client's accounting (Craswell, Stokes, & Laughton, 2002). Two facts can explain the low endorsement rates in Experiment 1. First, the proposed accounting we gave participants in each

vignette was intentionally designed to push the boundaries of generally accepted accounting practice. Second, participants' general suspiciousness was heightened because: (1) before they responded to the questionnaire, participants were asked to sign the consent form which, according to the rules of the institutional review board that approved it, included the title: "Auditor independence and bias"; and (2) the participants had all been recently hired away from Arthur Andersen after the firm was convicted of obstructing justice and shut down, and several expressed the concern that their ex-employers' fate would reflect badly on them. It is, perhaps, striking that the experiment's manipulation worked despite participants' heightened suspiciousness.

Experiment 1 leaves a number of important questions unanswered. What exactly is it in the relationship between auditor and client that has the power to sway auditors' judgments, given the clear ethical standards of their professions prohibiting such influence? Experiments 2 and 3 test two possible answers to this question: financial incentives and personal relationships. Because these two factors are confounded in actual auditor-client relationships, the experiments are conducted with participants who are not professionals. We created a new experimental paradigm in which participants were asked to play roles of principal or of agent. We were most interested in the behavior of hired agents, all of whom faced a conflict between serving the interests of the principals to whom they were accountable and telling the truth.

3 Experiment 2: The role of financial incentives

Experiment 1 offered a unique opportunity to test the biasing influence of conflicts of interest with actual experienced auditors. Experiment 2 attempts to complement these advantages by studying the biasing role of conflict of interest using a very different advising role and actual financial incentives for the advisers to be objective.

3.1 Method

Participants. One hundred twelve individuals participated for pay. Participants were recruited with advertisements in local newspapers and with flyers posted on the campuses of Carnegie Mellon University and the University of Pittsburgh. Forty-nine percent of the participants were male. They ranged in age from 20 to 41, with an average age of 24 years ($SD = 5.18$ years).

Procedure. Participants were run in groups of four and were assigned to one of four roles: the buyer, the buyer's agent, the seller, or the seller's agent. Principals

(the buyer and the seller) were seated next to their agents. All four participants received the same packet of information about the target firm, named E-Settle (see Appendix B). After reading through these materials, the principals made public reports on the value of the firm. The agents then reviewed these reports and offered either (1) an unqualified endorsement of the principal's assessment or (2) offered their own assessments that could include suggestions for revision. In addition, all agents specified both the most they thought the buyer should consider paying and the least they thought the seller should consider accepting. Both the principals' and the agents' public reports were viewed by both principals. Armed with their own estimates and those of their agents, principals then negotiated the purchase of the firm. We paid principals based on their negotiated outcomes. As the agreed-upon price went up, buyers profited less and sellers profited more.

In addition to the agents' public reports, which went to both principals, the agents each completed a private report that went only to the experimenter. This private report instructed them to report their true belief in the value of the target firm, and told them, "Your goal is for this assessment to be as impartial as you can make it." Participants were told that their estimates of the firm's value would be compared with the opinions of nonpartisan experts. The panel of experts consisted of eight professors of accounting and finance at Carnegie Mellon University's Tepper School of Business. The experts had assessed the value of the firm at \$14 million. If a participant's valuation were within \$3 million of the experts', he or she would receive an additional \$3 payment.

Participants were then asked to express how confident they were in the accuracy of their private appraisals. They were given the opportunity to bet on their private appraisals. If they chose to take the bet, they stood to win more money (\$6 instead of \$3, but their appraisals had to be more accurate (within \$1.5 million instead of \$3 million).

Finally, participants answered questions designed to assess the degree to which they believed their own appraisals of the target firm (E-Settle) may have been biased by the roles they played:

1. To what extent do you believe your private appraisal of the value of E-Settle was biased by your role? *The response scale ran from 0 (no bias whatsoever) to 10 (powerfully biased).*
2. To what extent do you think your role interfered with your ability to give an impartial estimate of E-Settle's value in your private assessment? *The response scale ran from 1 (it did not influence me at all) to 7 (I found it impossible to make an impartial*

assessment).

3. How do you believe your role influenced your estimate of E-Settle's value in your private appraisal? *The response scale ran from -\$3,000,000 (It led me to make an appraisal that was at least \$3 million below what it would otherwise have been) to +\$3,000,000 (It led me to make an appraisal that was at least \$3 million above what it would otherwise have been).*

Design. The experiment's manipulation of incentive structures included three conditions: fixed fee, pay for performance, and future business. In the fixed fee condition, agents were paid a fixed \$9 fee regardless of their reports and regardless of the principal's outcomes. In the pay for performance condition, agents received a \$3 base payment plus the same contingent payments as their principals: \$.50 per \$1 million in sale price either above \$0 (for the seller) or below \$30 million (for the buyer). In the future business condition, agents received a \$3 base payment; after the negotiation was complete, principals could choose to award future business to the agent, worth anywhere from \$0 to \$10. The decision of how much business to give to the agent did not influence the principal's own earnings. This manipulation was designed to mirror the incentives present for professionals who would like to continue offering profitable services to a client who has the choice of hiring them or some other service firm.

3.2 Results

Public reports. After reading about the target firm, principals provided estimates of its value. A 2 (role: buyer vs. seller) X 3 (pay: fixed, pay for performance, future business) ANOVA revealed a main effect for role. Not surprisingly, sellers estimated the value of the firm to be higher ($M = \$21.4 \text{ MM}$, $SD = \$8.5 \text{ MM}$) than did buyers ($M = \12.3 MM, $SD = \$6.44 \text{ MM}$), $F(1,49) = 18.94$, $p < .001$. After having seen this report, agents had the option of either unconditionally endorsing the principal's report or suggesting changes. A logistic regression revealed that neither role nor the extremity of the principal's valuation influenced the frequency of endorsement. However, pay condition was a significant predictor of the tendency to endorse, as revealed by a statistically significant regression coefficient, $B = -.75$, $p < .05$. Agents in the fixed payment and pay for performance conditions were about equally likely to issue unconditional endorsements (50 percent and 52 percent respectively). However, agents in the future business condition were less likely to issue an unconditional endorsement (17 percent) and instead tended to offer suggestions for revision (see Table 1),

Table 1: Agents' reports to their principals (Experiment 2).

	Fixed payment	Pay for performance	Future business
Unconditional endorsement	50%	52%	17%
Auditor suggests revision	50%	48%	83%
Percentage of revisions that recommend:			
a more extreme valuation	56%	70%	67%
a more moderate valuation	22%	10%	27%

Table 2: Valuations of the target firm, in millions (Experiment 2). Standard deviations in parentheses.

	Principal		Agent	
	Public valuation	Most buyer should consider	Least seller should consider	Private valuation
Buyer	\$12.30 (\$6.44)	\$12.60 (\$7.90)	\$9.40 (\$6.40)	\$9.84 (\$5.10)
Seller	\$21.40 (\$8.50)	\$20.00 (\$9.20)	\$16.20 (\$7.90)	\$17.60 (\$7.40)

$\chi^2(2) = 4.89, p < .05$. In their reports, a minority of agents suggested that their principals had been too extreme in their valuation of the company, and advised moderation (lower prices recommended to sellers and higher prices to buyers). The majority of reports by agents, however, suggested to their principals *that they had not been extreme enough*. Seventy percent of agents in the pay for performance condition and sixty-seven percent of agents in the future business condition recommended revision suggested more extreme valuations to their principals (higher prices recommended to sellers and lower prices recommended to buyers). There were some agents in each condition who declined to unconditionally endorse their principal's valuation, but did not clearly indicate how they thought it ought to be revised, and so the bottom two rows in Table 1 do not sum to 100% for each condition.

Agents were asked to specify the most they thought the buyer should consider paying and the least they thought the seller should consider accepting. In a 2 X 3 ANOVA with repeated measures on valuation (most and least), the main effect of agent's affiliation is significant, $F(1,50) = 11.3, p < .001$. See Table 2. Given that these were public reports to their principals, it may not be surprising that the role made such a big difference. Neither the main effect of pay nor its interaction with role was significant.

Private reports. More interesting than the difference in public reports is the fact that the role manipulation had a significant effect on agents' private appraisals. Private appraisals were subject to a 2 X 3 between-participants ANOVA. The results show a main effect of role, as illustrated in Figure 1. Consistent with Hypothesis 2, we

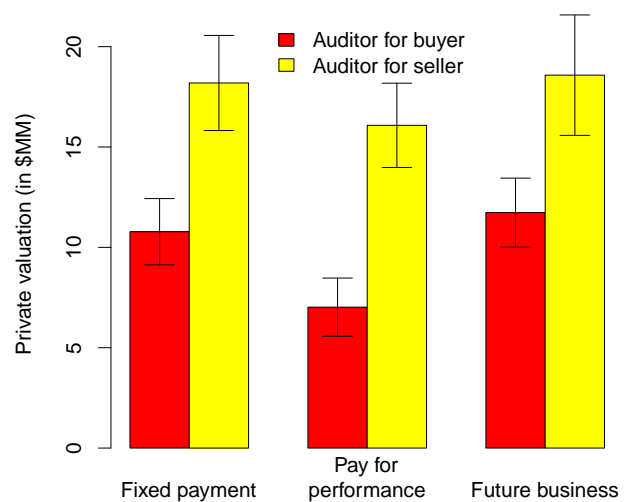


Figure 1: Agents' private valuations in the six experimental conditions (Experiment 2). Error bars denote standard errors.

found bias in private appraisals. Agents working for the seller reported the company to be more valuable ($M = \$17.6 \text{ MM}, SD = \7.4 MM) than did agents working for the buyer ($M = \$9.8 \text{ MM}, SD = \5.1 MM), $F(1,9) = 20.21, p < .001$. Agents' private judgments were significantly correlated with principals' public judgments ($r = .63, p < .001$). However, the main effect of role remained significant even when principals' public valuations were included as covariates in the ANOVA.

The main effect of pay condition was not significant, $F(2, 49) = 1.7, p = .20$. Contrary to Hypothesis 3, the inter-

action of pay and role was not significant either, $F(2,49) < 1$. The lack of a significant interaction effect reflects the fact that agents' pecuniary incentives did not significantly influence their private judgments. Accountability to a partisan, more than any monetary reward, appeared to influence agents' private beliefs.

After they had made their private valuations, agents could bet on the accuracy of their appraisals. In a logistic regression predicting the likelihood of betting, neither role nor pay was a reliable predictor of agents' expressed confidence in their own appraisals. More interestingly, the actual proximity of their appraisals to that of the experts did not predict the willingness to bet. Participants did not seem to have much sense of when their appraisals were accurate and when they were not.

Participants were aware that their roles had influenced their appraisals. In answer to the question, "To what extent do you believe your private appraisal of the value of E-Settle was biased by your role?" the average agent responded with a 4.6 ($SD = 2.6$) on an 11-point scale where 0 indicated no bias whatsoever and 10 indicated powerful bias. Likewise, in answer to the question, "To what extent do you think your role interfered with your ability to give an impartial estimate of E-Settle's value in your private assessment?" the average participant responded with a 3.4 on a 7-point scale. However, when asked directly how much they had been biased, agents working for the seller reported that their roles had led them to make appraisals that were, on average, only \$.89 million ($SD = \1.29 MM) higher than they would otherwise have been. In fact, their appraisals averaged \$2.9 million above the experts'. Buyers' agents, on the other hand, reported that their appraisals were \$.13 million less ($SD = \1.25 MM) than they would otherwise have been. In fact, their appraisals averaged \$4.2 million below the experts'. The difference in size between actual and self-reported bias is significantly different by paired t-test, $t(55) = 3.46$, $p = .001$. Although agents were aware of the biasing influence of role at some level, they underestimated its power and were unable to correct for it appropriately despite clear incentives to do so.

3.3 Discussion

The evidence from Experiment 2 suggests that financial incentives had a stronger influence on public reports than on private beliefs. However, agents' relationships with their principals acted as a more powerful influence on their private judgments than did financial incentives. Agents in the fixed payment condition had no financial incentive to come to conclusions that favored their principals; on the contrary, they had an incentive to provide an unbiased estimate of the company's value. Nevertheless,

their estimates were biased: Agents working for the seller reported that they believed the target firm was worth more than did those working for the buyer.

These results dramatize the challenges associated with playing multiple roles. When asked to move out of their partisan roles and make an objective private judgment, participants in our experiment could not do so. Both principals and agents provided private estimates that were biased by their public partisan positions. It is hard to say that agents in the fixed payment condition were biased in a self-serving manner, because they gained nothing by serving their principals' interests. Instead, it was accountability to the partisan, whose preferences were clear, that biased judgment (cf. Buchman et al., 1996; Tetlock, 1983). When they provided valuations that were biased in the directions of their principals' interests, they were acting as faithful agents of the buyer and the seller. When acting at the behest of someone else, people are more willing to engage in actions that they would otherwise find ethically problematic (Diekmann, Samuels, Ross, & Bazerman, 1997; Milgram, 1974).

When they stepped out of the agent role, however, it continued to influence their judgments. Although people may be aware of their vulnerability to bias, they tend to underestimate it, and do not adequately correct for it when called on to do so. Although agents indicated that they believed their valuations of the target firm were influenced by their roles, they underestimated the size of that influence and their private valuations remained biased despite financial incentives to correct that bias. In addition, participants did not have a good sense of the quality of their judgments. They were no more likely to bet when the accuracy of their answer meant that they would win the bet.

4 Experiment 3: The role of personal relationships

In the second experiment, the accountability relationship rather than the financial incentives proved the stronger influence on subsequent judgments in a new role. Therefore, we designed Experiment 3 to directly test the strength of the relationship's influence. Experiment 3's basic paradigm is similar to that of Experiment 2; however, instead of manipulating incentives, the relationship between the agent and client was manipulated. Payments for all agents in Experiment 3 were fixed at \$9.

4.1 Method

Participants. One hundred and twelve individuals participated for pay. Participants were recruited with advertise-

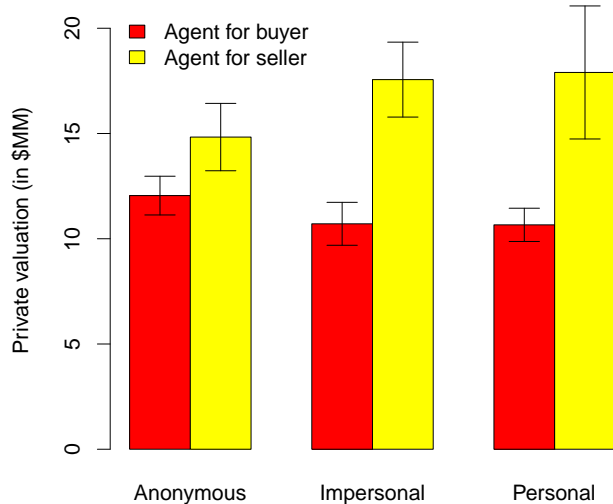


Figure 2: Agents' private valuations in the six experimental conditions (Experiment 3). Error bars denote standard errors.

ments in local newspapers and with flyers posted on the campuses of Carnegie Mellon University and the University of Pittsburgh. Forty-nine percent of the participants were male. They ranged in age from 18 to 49, with an average age of 22 years.

Procedure. The experimental procedure was the same as in Experiment 2, except that principals in Experiment 3 were also asked to make private assessments of the value of the target firm.

Design. Experiment 3 included three relationship conditions: Anonymous, Impersonal, and Personal. In the anonymous condition, agents never met their principals. Agents received their instructions from, and submitted their reports to, the experimenter. In the impersonal condition, agents and principals sat next to one another, but agents' interaction with their principals was limited to the exchange of paperwork. In the personal condition, agents spent a few minutes getting to know their principals before they started working together. They exchanged personal information (such as home town, marital status, hobbies, and interests). Agents in the impersonal and personal conditions handed their reports directly to their principals, with the exception of the agents' private reports, which were submitted to the experimenter.

4.2 Results

Public reports. Not surprisingly, principals' public valuations again differed by role. A 2 (role) X 3 (relationship) ANOVA revealed a significant main effect of role, $F(1, 50) = 4.88, p = .032$. Participants in the role of the seller valued the company more highly ($M = \$18.18 \text{ MM}, SD =$

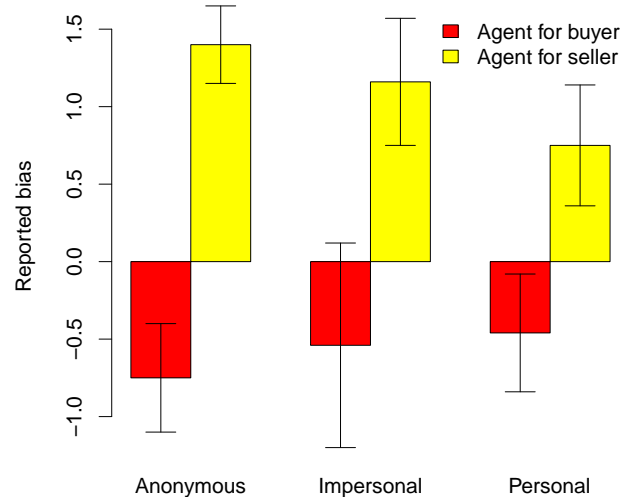


Figure 3: Agents' beliefs about their own tendencies to be biased (Experiment 3). Error bars denote standard errors.

$\$7.33 \text{ MM}$) than did participants in the role of the buyer ($M = \$12.58 \text{ MM}, SD = \13.54 MM). Neither the main effect of relationship nor its interaction with role had a significant influence on principals' public judgments.

Nineteen of the 56 agents (34 percent) offered unqualified endorsements of their principals' valuations. The remaining 37 agents offered some suggestions to their principals. Twenty (53 percent) of these suggested that the principal be more demanding (by recommending a higher price to the seller or a lower price to the buyer). Neither the tendency to offer unqualified endorsement or the recommendation of a more extreme price varied significantly by relationship.

As in Experiment 2, agents' recommendations to principals on the price of the target firm were significantly influenced by their roles. In a 2 X 3 ANOVA with repeated measures on valuation (most the buyer should pay vs. least the seller should accept), the main effect of agents' role is significant, $F(1, 46) = 17.7, p < .001$. See Table 3. However, neither the main effect of relationship nor its interaction with role is significant. Agents' public reports did not differ significantly by relationship with the principal.

Agents' private valuations. To test the effect of role and relationship on agents' private beliefs, we conducted a 2 X 3 ANOVA on their private valuations. There was a strong main effect of role, such that agents representing the seller gave significantly higher private valuations ($M = \$16.49 \text{ MM}, SD = \6.47 MM) than those representing the buyer ($M = \$11.27 \text{ MM}, SD = \2.85 MM), $F(1, 50) = 16.7, p < .001$. The pattern in agents' private valuations is illustrated in Figure 2. The main effect of relationship is not significant, $F(2, 50) = .16, p = .85$, nor is the in-

Table 3: Valuations of the target firm, in millions (Experiment 3). Standard deviations in parentheses.

	Principal		Agent	
	Public valuation	Most buyer should consider	Least seller should consider	Private valuation
Buyer	\$11.00 (\$3.63)	\$12.20 (\$3.92)	\$9.24 (\$3.33)	\$11.27 (\$2.85)
Seller	\$18.39 (\$8.09)	\$21.36 (\$10.32)	\$14.86 (\$6.51)	\$16.49 (\$6.48)

teraction between role and relationship, $F(2,50) = 1.22$, $p = .303$. This last result represents a failure to support Hypothesis 4's prediction that the personal relationship would influence the strength of bias.

We performed one additional test to assess the degree to which agent anonymity influenced agents' bias towards the interests of their principals. First, we created an index of partisan bias by measuring the degree to which agents' private valuations deviated from the experts' \$14 MM judgment in the direction consistent with the interests of their principals. The results suggest that agents in the anonymous condition made private valuations that were less biased toward the interests of their principals ($M = \$1.39$ MM, $SD = \$4.46$ MM) than were the valuations of other agents ($M = \$3.52$ MM, $SD = \$5.18$ MM), but this difference is not quite significant, $t(54) = 1.62$, $p = .11$.

The data suggest that agents were unable to forget about their roles and make unbiased appraisals even when they were given incentives for accuracy. Were participants aware of these biases? Their responses to the post-experimental questionnaire suggest that they were. In response to the question, "To what extent do think your role interfered with your ability to give an impartial estimate of E-Settle's value in your private appraisal?" the average participant responded with a 3.3 ($SD = 1.72$) on a 7-point scale. This is significantly different from the endpoint of 1, which would have indicated that "it did not influence me at all."

A more intriguing result comes from answers to the question, "How do you believe your role influenced your estimate of E-Settle's value in your private appraisal?" (See Figure 3.) As in Experiment 2, participants showed only limited understanding of how their roles had influenced their judgments. On average, buyers' agents reported that their appraisals were biased \$.61 MM lower ($SD = \1.29 MM). Sellers' agents reported that their appraisals were biased \$1.14 MM higher ($SD = \1.02). Again, agents underestimated their biases, since buyers' agents' appraisals averaged \$2.6 MM below the experts' appraisals, and sellers' agents' appraisals averaged \$2.4 MM above those of the experts. As in Experiment 2, self-reported bias is significantly smaller than actual bias by

paired t-test, $t(55) = 2.29$, $p = .026$.

Agents' insensitivity to their own accuracy is reflected in their tendencies to bet. Fifty-seven percent of all agents bet that their private valuations were within \$1.5 MM of the experts' valuations. In fact, only 25 percent of agents' valuations were within \$1.5 MM of the experts'. There were no effects of the experimental manipulations on the tendency to bet. Only 57 percent of agents bet optimally, betting when they would win and not betting when they would lose. The remaining 43 percent bet when they lost or didn't bet when they would have won. This is not significantly different from the null hypothesis of random betting, $\chi^2(1) = 3.5$, ns .

Principals' private valuations. Principals were also asked to forget their roles for a moment and specify a private valuation that would not be shared with anyone. They were told that they would be paid for their accuracy. As with agents, principals were unable to disregard their roles when they had incentives to do so. A 2 X 3 ANOVA revealed a main effect of role in which buyers estimated E-Settle to be worth less ($M = \$11.01$ MM) than did sellers ($M = \$18.39$ MM), $F(1,49) = 19.04$, $p < .001$.

4.3 Discussion

No agents in Experiment 3 received any financial benefit for assisting their principals. Nevertheless, the data show that their private beliefs, as reflected in their private reports, were swayed in the direction of their principals. One possible mediating mechanism by which affiliation could have its effect has to do with perspective-taking. Prior research has established that partisan perspectives produce partisan, biased judgments (Thompson, 1995). The judgments of affiliated agents may be influenced by the fact that agents take the principal's perspective and consider the world from a partisan point of view. Once encoded from a partisan perspective, it can be difficult if not impossible to undo that encoding or to retrieve unbiased information from memory (Babcock, Loewenstein, Issacharoff, & Camerer, 1995; Galinsky & Moskowitz, 2000).

5 General discussion

Three experiments demonstrated the potential for conflicts of interest to bias judgment. Participants were placed in partisan roles that gave them a reason to desire a certain outcome. When asked then to make neutral judgments, they failed to extricate themselves from the influence of their partisan roles. It was as if, once they had arrived at a partisan perspective, the justifications for that perspective were readily accessible in their minds and so held undue sway over subsequent judgments (Mussweiler & Strack, 1999; Strack & Mussweiler, 1997), even when they were made in the presence of an explicit goal of impartiality.

The first study used a between-participants design that provided evidence suggesting that experienced professionals are not immune from the biasing influence of role accountability. The second and third studies used more elaborate designs and allowed us to examine moderators of this effect. It is interesting that the manipulation of monetary incentives in the second experiment failed to affect the carry-over of agents' partisan roles. One possible explanation for this failure is that monetary incentives provide a transparently external motive for bias. That is, participants can easily explain previous partisan behavior simply because they were doing it for the money (Festinger & Carlsmith, 1959). When the cause for partisan behavior is social pressures or motives other than money, explaining such motivated behavior becomes more difficult. As research on cognitive dissonance has persuasively shown, the apparent inconsistency between behavior and beliefs is often most easily resolved by changing one's beliefs (Aronson, 1969). However, it is often the case that there is more than just money at stake when professionals are asked to take on multiple roles.

Although economic models of rationality would assume that people can switch between roles without one influencing the other, evidence suggests that actual people have somewhat more trouble doing so. Nevertheless, it may be easier to identify the biasing effect of monetary than of other incentives. Although economic models of human behavior do not assume that people only care about money, they do assume that utility can be quantified, and that people respond to money as they do to other motivations. It is clearly not sensible or rational for people to be aware of the effect of monetary incentives on their behavior but be relatively blind to the effect of social pressure. Nevertheless, the evidence suggests that this may be the case.

5.1 Policy implications

In many situations, policy makers would like to minimize the potentially corrosive effects of conflicts of in-

terest. One frequent response has been to establish strict legal penalties for corruption. For instance, the Sarbanes-Oxley Act of 2002 increased the potential criminal penalties for accounting fraud and broadened the potential targets of such enforcement in the United States. The problem with this approach is that it assumes people are aware of the degree to which selective mental accessibility of thoughts, evidence, and arguments can influence their professional judgments; however, if they are not aware, then conscious attempts to increase objectivity would fail to correct for biases in judgment. The effectiveness of potential legal punishments is further undermined by their psychological remoteness. The influences of professional roles are often proximal, compelling, and certain, whereas the punishments for misbehavior are often distant, probabilistic, and enforced only long after the proscribed behavior has been committed, even if the punishments are severe.

Auditors are personally familiar with their clients and are aware of the negative consequences of an adverse audit report. On the other hand, the numerous investors or potential investors who rely on their reports are unknown strangers (see Small & Loewenstein, 2003). The chances of auditors being caught and prosecuted for deliberate misconduct, resulting in audit failure, are low and depend on the co-occurrence of a number of unlikely events. These sorts of legal penalties might be designed to establish material incentives for fulfilling the role of objective, independent auditor. If self-interest were computed rationally as an expected value and it then drove motivated reasoning, eliminating bias would be as simple as increasing the criminal penalties for fraud. However, not all incentives are created equal. Those that are immediate, compelling, and clear have a better chance to influence judgment (Loewenstein, 1996; Loewenstein & Elster, 1992; Moore & Loewenstein, 2004).

In analyzing the problem of conflict of interest in business, both the mass media and the academic literatures in business, accounting, and law routinely assume that bias is a matter of deliberate choice (Antle, 1984; Jensen & Meckling, 1976; Simunic, 1984). Auditors, for example, are assumed to have the ability to complete high-quality, independent, unbiased audits if they choose to do so. Bias, to the extent that it exists, must, in this view, be a deliberate response to incentives.

This "economic" account of conflict of interest is challenged by psychological research which suggests that biased information processing is not only pervasive, but is typically unconscious and unintentional — i.e., seldom a matter of deliberate intentional choice (Chugh, Bazerman, & Banaji, 2005; Moore, Cain, Loewenstein, & Bazerman, 2005). As the results we present in this paper suggest, professionals who face conflicts of interest

may find it difficult, if not impossible, to simply choose objectivity. This view is compatible with what Chugh et al. (2005) call bounded ethicality: people routinely do things that dispassionate observers would regard as unethical without intending to behave unethically or even considering the possibility that their behavior has ethical implications.

Although economic theory does not make assumptions about where in the human mind decisions get made, the distinction between intentional and unintentional influences on choice is nevertheless important for understanding economic behavior. This is because it challenges the standard assumption that an individual is a unitary agent with coherent and consistent preferences and motives. In reality, however conscious corruption and unconscious bias respond to different incentives and influences (Denes-Raj & Epstein, 1994; Moore & Loewenstein, 2004; Shiv & Fedorikhin, 1999).

5.2 Limitations and alternative explanations

These experiments attempt to elucidate some of the psychological processes behind conflict of interest, but two of our three experiments come from laboratory studies in which people were asked to play fictitious roles. Of the threats to external validity in our studies, perhaps the most serious is that none of our participants faced the threat of punishment for fraud. Some have argued that the threat of outside accountability in general and lawsuits in particular should provide sufficient countervailing incentives to mitigate the incentives for professionals to report anything other than the truth (Antle, Gordon, Narayanamoorthy, & Zhou, 2006; King, 2002). It is clearly true that professionals face a mix of incentives that include immediate financial rewards, career advancement, the threat of legal repercussions, and concerns regarding reputation. While some of these incentives encourage accuracy and some encourage bias, we are suspicious of the assumption that the balance of incentives happens to work out perfectly to produce unbiased decisions from auditors, attorneys, physicians, politicians, and other professionals. As we have noted, achieving such balance is difficult because motivations toward bias tend to be immediate and psychologically compelling, whereas motivations toward accuracy tend to be more distant and uncertain.

An alternative explanation for the results of Experiments 2 and 3 is that our manipulations had no real effect on private beliefs, and that private beliefs differed by role because participants felt compelled to be consistent with their public statements. Although it is possible that self-presentational concerns were prominent for participants,

this would likely be an even larger concern for working professionals. Research on cognitive dissonance demonstrates that people routinely bring their private beliefs into line with their public behavior (Festinger, 1957; Festinger & Carlsmith, 1959). Indeed, if people use their own behavior to make inferences about their beliefs as evidence suggests (Bem, 1972), then public statements are likely to have a powerful influence on private beliefs.

6 Conclusion

In March of 2004, a case came before the U.S. Supreme Court in which Richard Cheney, the sitting Vice President, was a defendant. A number of people recommended that Justice Antonin Scalia, a long time friend of Cheney, recuse himself from the case. In a public statement in which he defiantly refused to recuse himself, Scalia insisted that his judgment would not be influenced by their friendship or by the fact that the Vice President had recently given him a ride down to Louisiana in Air Force Two to participate in a duck-hunting excursion together: "If it is reasonable to think that a Supreme Court Justice can be bought so cheap, the nation is in deeper trouble than I had imagined" (Scalia, 2004). The evidence presented in this paper suggests that just because Scalia was not aware of such influences on his judgment does not mean that they did not exist. Furthermore, when the nation's public policies are made in ignorance of the relevant psychological facts, the resulting policies may indeed put the country in deep trouble.

Professionals rarely set out to become corrupt. However, many of them face powerful conflicting motives that make it difficult to maintain perfect professional integrity. Indeed, the present results suggest that it may be impossible for professionals to fulfill roles that demand objectivity while simultaneously fulfilling roles that demand partisanship. Professional codes of conduct rarely provide sufficient solutions; their most frequent response to conflict of interest is to direct professionals to not be influenced by them. For example, the Code of Ethics of the American Medical Association (2002) demands that "Under no circumstances may physicians place their own financial interests above the welfare of their patients." If physicians were to take this mandate seriously, they would provide their services free of charge. Simply denying that a conflict of interest exists does not represent a useful solution. Our results suggest that problems of conflict of interest may be more profound than is commonly assumed. It is not enough to consciously counteract potentially biasing influences on judgment; people might not be able to adequately correct for biasing partisan influence. Eliminating partisan allegiances may be the only way to eliminate conflict of interest.

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Appendix A: Experiment 1’s Auditing Vignettes.

Both variants of the role manipulations are included in brackets separated by a slash. Each Vignette is followed by both the valuation question and the approval question.

Vignette 1

[A mutual fund is planning to invest in Rogers Communications (Ticker: RG), and since Rogers is a regular KPMG client, you have been hired to appraise the accounting and make a recommendation as to whether or not the company is a good investment. You have been hired as the external auditor for] Rogers Communications (Ticker: RG), currently part-owners of the Toronto Blue Jays baseball. Rogers has decided to diversify its holdings and purchase a majority share in the Carolina Panthers National Football League (NFL) team for \$200 million in the beginning of the current fiscal year. The franchise’s assets and liabilities, restated at their fair values, amounted to \$10 million and \$22 million, respectively.

Some board members noted that the franchise is one of the most poorly-performing team in the NFL, has registered operating losses of an average of \$5 million per year, and will probably not be generating any future income.

Valuation question: As the firm’s external auditor, what is your assessment of the appropriate expenses relating to the purchase that should be reported for this year?

Approval question: Upon purchasing the team, Rogers recorded an intangible asset, Goodwill, for \$212 million, representing the difference between the purchase price and the net worth of the sports franchise [\$200 million – (–\$12 million)]. Furthermore, since the \$212 was recorded as Goodwill, this amount will no longer be amortized (based on the new Exposure Draft issued by the FASB), but will be periodically revalued for impairment.

Do you accept the accounting as provided by Rogers Communications, Inc.?

- Yes
- No

Vignette 2

[A mutual fund is planning to invest in Pillowtex (Ticker: PTEX), and has asked you to appraise the accounting and eventually make a recommendation as to whether or not the company is a good investment. / You have been hired to review the books of Pillowtex (Ticker: PTEX).] The balance sheet of Pillowtex reflects, in millions of dollars, total assets of \$1,000, total liabilities of \$1,400, and total stockholders’ equity value of negative \$400.

Pillowtex has had considerable trouble in meeting its debt payments over the last year, and has renegotiated and restructured the terms of \$800 million of its liabilities with the associated creditors. The \$800 million in long-term debt represents bank loans with interest rates between 8% and 12%. To replace the \$800 million debt, Pillowtex will issue convertible bonds amounting to \$750 million, and a million shares of \$100 par, 7% Pillowtex preferred stock. The bonds will carry an interest rate of 11% and are payable over the next 10 years. The convertibility feature of the bonds is valued at \$70 million and allows the bondholders to convert each \$1,000 bond into 150 shares of Pillowtex common stock 3 years after issuance date.

Valuation question: As the company’s external auditor, your task is to determine the values for assets, liabilities, and stockholders’ equity that should be reported after the debt restructuring.

Approval question: After the debt restructuring, Pillowtex reported the following figures on its balance sheet (in millions of dollars):

Assets	\$ 1,000
Liabilities	1,230
Stockholders’ equity	–230

Do you accept the accounting as provided by Pillowtex Corporation?

- Yes
- No

Vignette 3

[Big 5 Sporting Goods (Ticker: BGFV) is a large sporting goods retailer that is a regular client of KPMG, and is a potential investment for a large mutual fund. The mutual fund has hired you for an objective appraisal of the books of

Big 5, and to eventually determine whether or not it is a good investment. This year, Big 5 has launched its Premiere Sports Enthusiast (PSE) membership program, which provides benefits to members for a fixed fee. Big 5 Sporting Goods (Ticker: BGFV) is a large sporting goods retailer. This year, Big 5 has rehired you as their external auditor to review the accounting of its newly-launched Premiere Sports Enthusiast (PSE) membership program, which provides benefits to members for a fixed fee.]

The benefits include a 10% discount on select store merchandise, a 5% discount on select sporting apparel, discounted tickets to sporting events, members-only activities such as mountain hikes and fitness training (additional fees will apply), and quarterly email newsletters. Three membership plans are available: a one-year renewable membership, which costs \$25; a three-year renewable membership, which costs \$40; and a lifetime membership, which costs \$70. The following data summarizes the number of members and cash amounts received this year. (Memberships were received evenly throughout the year.)

One-year memberships:	8,000 x \$25 = 200,000
Three-year memberships:	6,000 x \$40 = 240,000
Lifetime memberships:	12,000 x \$70 = 840,000

Valuation question: As the company's external auditor, what is your assessment of the appropriate revenue from memberships to recognize for this year?

Approval question: Big 5 included in its income all the membership fees received during the year. Do you accept the accounting as provided by Big 5 Sporting Goods?

- Yes
 No

Vignette 4

[A mutual fund has identified Harte-Hanks, Inc. (Ticker: HHS), whose statements have regularly been audited by KPMG, as a potential investment, and has hired you to objectively appraise the company's financial statements and to report back to the mutual fund your findings. Harte-Hanks, Inc. (Ticker: HHS), whose statements are regularly audited by KPMG, presents the following data for this current fiscal year.] Note that all figures that follow are expressed in millions of dollars.

As a direct marketing company, Harte-Hanks has regularly purchased customer lists from third parties. Customer lists are reported as an intangible asset on the balance sheet, and are amortized over 10 years, or at a rate of 10% per year. At the beginning of this fiscal year, the value of this asset on Harte-Hanks' balance sheet amounted to \$4,000, and no new customer lists were purchased this fiscal year. Harte-Hanks identified customer lists with a total remaining book value of \$540 (which is part of the \$4,000 balance sheet figure) purchased from Asia four years ago, that were generating revenues significantly below the target revenue numbers expected from the customers on those lists.

Valuation question: As the company's external auditor, what is your assessment of the appropriate expenses for customer lists that should be reported for this year?

Approval question: Harte-Hanks decided to write-off the entire \$540 this fiscal year rather than amortizing it over the next six years. The total expense for customer lists amounted to \$886 (the amortization of the remaining \$3,460 worth of customer lists, and the \$540 write-off), and is included in the expense figure above.

Do you accept the accounting as provided by Harte-Hanks, Inc.?

- Yes
 No

Vignette 5

[A mutual fund is looking into investing in a biotechnology firm, and has identified Antigenics (Ticker: AGEN), a regular client of KPMG, as a potential candidate. You have been hired by the mutual fund to appraise the financials of Antigenics and to eventually determine if it is a good investment. At the beginning of this year, Bone Care International (Ticker: BCII), whose statements have been audited by PricewaterhouseCoopers, entered into a limited research partnership with Antigenics (Ticker: AGEN), a regular KPMG client, for a three-year project to develop a pain-relieving drug.] The partnership called for Antigenics to raise capital by issuing its own stock with attached warrants for Bone Care stock. Bone Care itself also invested \$15 million in Antigenics stock. Bone Care in turn

performed the research and development of the drug over three years, during which time Antigenics will pay Bone Care a development fee amounting to \$30 million (or \$10 million per year, which covers the exact amount that Bone Care spends on R&D for this particular project). The drug that Bone Care develops will be produced and marketed exclusively by Antigenics. The partnership agreement also stipulated that Bone Care could opt to purchase the patents to the drug from Antigenics at a value of \$65 million after the three-year period.

Since the two companies have entered into a limited partnership, Bone Care did not own a controlling interest in Antigenics, and vice versa. Thus, no consolidation was necessary on the books of either party.

Valuation question: As the external auditor, you are asked to determine the appropriate expenses from this R&D partnership that should be reported for this year for Antigenics.

Approval question: Bone Care records the \$10 million received from Antigenics as revenue to offset any research and development expenses it incurred, while Antigenics capitalizes the \$10 million payments as an intangible asset, to be amortized after the three-year development period is over.

Do you accept the accounting as reported by Antigenics?

Yes

No

Appendix B: The E-Settle Case

This case deals with the potential acquisition of E-Settle by Crilley, two firms in the field of alternative dispute resolution. E-Settle is a pioneer in a new set of Web-based mechanisms for helping people and firms resolve disputes efficiently and at low cost. Crilley is a leader in the more mature industry of face-to-face alternative dispute resolution. E-Settle and Crilley agree that synergy can be created by Crilley's acquisition of E-Settle. However, they have not agreed on a price. Consistent with the creative problem-solving processes that both firms advocate, they hired a mutually agreed-upon consultant to prepare a two-page background report relevant to the valuation of E-Settle. The report below is the result of this decision. Both parties have been given this report in advance of the negotiation, and both understand that each firm has a right to negotiate the transaction price as they see appropriate.

CONSULTANT'S REPORT

For a variety of societal reasons, the United States has developed as a very litigious society. Americans rely on the court system far more than citizens in other economies, creating costly delays and high legal costs for firms and individuals. In the last two decades, a new industry, alternative dispute resolution (ADR), has developed to help parties resolve disputes more efficiently and at lower costs. Alternative dispute resolution includes mediation, facilitation, arbitration, mini trials, and a variety of other procedures. Typically, a third party is hired to help the disputants reach agreement. While alternative dispute resolution has proven to be an excellent alternative to the courts, its costs have increased as attorneys have become more and more involved in all phases of the process, bringing high legal fees back into the equation.

Crilley is known for providing the highest quality service in the alternative dispute resolution field. The key to its success has been to hire the very best third-party experts available. As a result, Crilley is not the low-cost provider of dispute resolution services. As firms have become more cost-focused, Crilley's positioning is made even more problematic by the emergence of electronic dispute resolution services. These services provide low-cost dispute resolution by offering highly mechanical solutions to disputes. Electronic services allow for the possibility of dispute resolution without relying on the experts that firms like Crilley provide. More and more often, clients desire a lower cost service for some of their disputes (e.g., auto claims under \$10,000). With the goal of offering a broader range of services, several alternative dispute resolution firms have acquired electronic alternative dispute resolution firms. The success of such acquisitions was a key factor in motivating E-Settle and Crilley to consider a merger of their own.

E-Settle is one of the new dot-com entries in the dispute resolution field. A number of firms have emerged that allow two disputants to efficiently reach resolution at far lower costs than traditional alternative resolution procedures. The key to this success has been to limit the amount of evidence presented by each side using the Web to facilitate resolutions, thereby reducing costs such as travel. Most of the dot-coms are very efficient, replacing human judgment with a very simplistic decision rule. E-Settle was based on the idea that, while disputants want efficiency, they also want human expertise and the right to have their evidence heard.

E-Settle deals with disputes in ten categories, including auto accident claims, disputes between health insurers (usually Health Maintenance Organizations) and their patients, and property-boundary disputes between neighbors. E-Settle offers disputants who cannot reach agreement on their own the opportunity for both parties to submit a settlement offer and no more than 1000 words of evidence to an E-Settle expert (experienced attorneys and former judges with expertise in the specific dispute area). The disputants do not see the material submitted to the expert, nor is this information available as part of a future court case. Within 48 hours, the expert assesses the information and proposes a single non-binding settlement. Each party receives the expert's non-binding settlement proposal and responds with an "accept" or "decline." If both parties accept, they have a legally binding deal. If one or both decline, there is no deal, the interaction with E-Settle is over, and the parties maintain the same legal options they had prior to the E-Settle process. If the offer is not accepted by both parties, neither learns of the offer submitted by the other party. Forty-two percent of all disputes that use E-Settle reach agreement — a fantastic rate given the cost efficiency.

E-Settle, founded in 1997 with just \$200,000 in start-up funds, was one of the first dot-coms in the dispute resolution field. Earnings for E-Settle were \$150,000 in 1997, \$400,000 in 1998, \$1,100,000 in 1999, and 2,000,000 in 2000. However, sales appear to be leveling off or declining in 2001. The electronic dispute resolution industry has become very competitive, and E-Settle uses mediators who are, on average, more costly than those used by its competitors. While this distinction gives E-Settle a positioning advantage, it puts the firm at a disadvantage in terms of price competition. In addition, E-Settle's lead competitors have been acquired by larger corporations that have extensive funds available for marketing.

E-Settle is privately held by a small group of founders, early-stage venture capitalists, and so-called "angel investors" who bought into the firm in late 1999. Because it is privately held, E-Settle has no clear value set by the marketplace. Instead, private companies such as E-Settle must be valued using less objective standards.

In prior years, dot-com acquisitions had often been valued using measures such as price-to-revenues (the ratio of a firm's price to its annual revenues). The past year's stock market experience, however, has demonstrated the usefulness of measures such as price-to-earnings (the ratio of a firm's price to its annual earnings or profits), which focus on profitability. At the same time, the most important determinant of a firm's value should be not past results, but future prospects. Average price-to-revenues and price-to-earnings have fluctuated dramatically over the years in acquisitions of professional dot-com firms, and the average ratios for other firms are only of limited value in establishing a value for E-Settle. Some analysts believe that prices for firms in the professional dot-com service sector have hit rock bottom and should be going up, others argue that prices remain artificially high. In the end, however, the value of E-Settle depends fundamentally on its long-term business potential.

The table below provides information on E-Settle's revenues (the total value of all sales), earnings (profits), and market share (E-Settle's percentage of the market). The table also includes the mean price-to-earnings ratios for professional service dot-com firms purchased by other firms in 1997–2000 and in the first part of 2001. Note that the fall of dot-coms has had a dramatic effect on these ratios.

Year	E-Settle's revenues	E-Settle's earnings	E-Settle's market share	Price-to-earnings ratio for all acquisitions of professional service dot-coms
1997	\$854,000	\$150,000	44%	6:1
1998	\$2,324,000	\$400,000	31%	10:1
1999	\$6,216,000	\$1,100,000	26%	14:1
2000	\$11,597,000	\$2,000,000	24%	7:1
2001	?	?	?	4:1

The consultant also found data on three electronic settlement acquisitions:

Date	Name	Annual earnings	Sales price
February, 1999	Esolution	\$600,000	\$8,000,000
July, 1999	FAIR	\$1,200,000	\$11,000,000
April, 2001	ADRquick	\$1,100,000	\$8,800,000