Insinuation Anxiety:

Concern that Advice Rejection will Signal Distrust after Conflict-of-Interest Disclosures

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Abstract

When expert advisors have conflicts of interest, mandatory disclosure is a common regulatory response. In four experiments (three conducted in medical contexts, one in a general risk-taking field context), however, we show that disclosure of a financial or nonfinancial conflict of interest can have a previously unrecognized perverse effect on the advisor–advisee relationship. Disclosure, perhaps naturally, decreases an advisee's trust in the advice. But disclosure can also lead to concern that failure to follow advice will be interpreted as a signal of distrust. That is, rejecting the advice could suggest that the advisee is insinuating that the advisor could be biased by the conflict of interest. We show that this *insinuation anxiety* persists whether the disclosure is voluntary or required by law and whether the disclosed conflict is big or small, but it diminishes when the disclosure is made by an external source rather than directly by the advisor.

Keywords: social influence, advice, decision-making, ethics, conflicts of interest, disclosure

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A conflict of interest (COI) exists when primary ethical or professional interests clash with personal interests (Institute of Medicine, 2009). For example, physicians face diverse COIs when offered gifts from pharmaceutical companies, receive referral fees for enrolling patients in clinical trials, or benefit financially from tests or procedures they recommend to patients. Neither the American Medical Association's 2005 Code of Ethics nor the 2010 Health Care Reform Act discourages physicians from exposing themselves to conflicts, but both require that physicians and the industry disclose them. Disclosure is the most ubiquitous policy response to COIs across a diversity of industries and professions. In theory, disclosing COIs provides potentially useful information about the incentives an advisor faces, enabling advisees to make more informed decisions about whether to follow the advice they receive.

While we do not argue against disclosure, disclosure is not the panacea it is often purported to be. Several negative effects of disclosure have been documented in prior research, and this paper reveals a new one. Prior research has shown that disclosures often fail to undo the influence of potentially biased advice (Beshears, Choi, Laibson, & Madrian, 2009). Disclosing a COI can sometimes even increase the degree to which advice is self-serving, either because advisors engage in "strategic exaggeration" to counteract anticipated discounting of that advice or because advisors feel "morally licensed" to give more biased advice when advisees haven been warned (Cain, Loewenstein, & Moore, 2005, 2011; Monin & Miller, 2001). In other research, disclosure decreased trust but increased compliance with advice due to a *panhandler*

effect (Sah, Loewenstein, & Cain, 2013) whereby COI disclosure makes an advisee aware of the advisor's self-interest, and advisees then view the disclosure as an implicit favor request that cannot be denied—e.g., effectively, "Now that I have disclosed that I get a bonus if you take my advice, please help me receive that bonus."

In this paper, we demonstrate an important new mechanism, *insinuation anxiety*, which refers to advisees' concern about how their rejection of advice may be interpreted by the advisor as an insinuation that the advice is inappropriately biased.

Insinuation Anxiety

To better understand insinuation anxiety, imagine that a patient rejects a doctor's advice to enter a clinical trial rather than stick with the drug that he/she has been taking. In the absence of a disclosed COI by the physician, there are many plausible medical or personal explanations for the patient's decision to stay on the current drug (e.g., an aversion to risk or satisfaction with the current drug). However, if the doctor has disclosed that he/she will benefit from the patient entering the new drug trial, a new and salient explanation is introduced for the patient's unwillingness to enroll: Perhaps the patient worries that the doctor's advice is biased by the conflict. The patient may worry further, that this interpretation will be especially offensive to the doctor, since being affected by a COI is traditionally (but often incorrectly) thought to stem from intentional corruption rather than unintentional bias (Dana & Loewenstein, 2003; Sah, 2012; Sah & Fugh-Berman, 2013; Sezer, Gino, & Bazerman, 2015). Physicians also tend to believe that their colleagues may be susceptible to influence from COIs but believe themselves to be personally invulnerable (McKinney et al., 1990). After a COI disclosure, refusing a doctor's recommendation can therefore be tantamount to calling the doctor a crook.

It is almost inevitable that the advisor will make some inference about the advisee's motives for rejecting the advice (Jones, 1990) and that—due to a number of concerns, including saving the "face" of the advisor (Goffman, 1956; Lim & Bowers, 1991), evading embarrassment (Modigliani, 1968, 1971), or showing politeness (Brown & Levinson, 1987)—the advisee will want to avoid signaling a negative attitude toward the advisor (Apfelbaum, Sommers, & Norton, 2008). Impression management concerns are clearly important, even in economic lab games (Murnighan, Oesch, & Pillutla, 2001; Pillutla & Murnighan, 1995), let alone in more developed social relationships (Tetlock, 2002). People put considerable effort into maintaining harmony in relationships (Baumeister & Leary, 1995), and rejecting an advisor's recommendation risks undermining that harmony. Indeed, prior research has demonstrated that closer relationships may enhance these dynamics, such as when dental patients opt for more expensive treatment the longer they have known their dentists (Schwartz, Luce, & Ariely, 2011; and, for the contra view that breaches of trust are more salient in new relationships, see: Lount, Zhong, Sivanathan, & Murnighan, 2008).

Given these points, how does disclosure affect patient compliance with medical advice? On the one hand, by alerting the patient to potential bias, disclosure should reduce trust (Hwong, Sah, & Lehmann, 2014; Kesselheim et al., 2012; Sah & Feiler, 2014; Sah, Loewenstein, et al., 2013) and, hence, reduce compliance. On the other hand, by introducing insinuation anxiety, disclosure can increase pressure to comply. Although the net effect of these two influences is indeterminate and will vary by context (as it did in our experiments), both effects risk poisoning the doctor–patient relationship. Furthermore, lack of trust in advice can have adverse consequences for advisees when advice is, in fact, unbiased (Sah & Feiler, 2014), or when

following the advice is better than doing nothing at all—e.g., leaving a medical condition undiagnosed or treated.

Relationship to panhandler effect: Although the effect of insinuation anxiety may overlap with the panhandler effect (Sah, Loewenstein, et al., 2013), insinuation anxiety is a separate phenomenon. Insinuation anxiety is primarily about avoidance of signaling distrust, while the panhandler effect is primarily about avoidance of signaling unhelpfulness. Panhandler effects are likely to be strongest in situations in which advice recipients feel some pressure to help the advice giver, as might be the case, for example, when interacting with door-to-door fund raisers. However, panhandler effects are likely to be weakened in many of the most important settings in which conflicts of interest occur (e.g., in medicine), in which advice givers are generally assumed to be acting predominantly with an eye to the interests of advice recipients. In such situations, there is likely to be a more negative reaction to implicit requests that seem self-serving. Hospital patients, for example, told by doctors that their physician will receive a referral fee if they enter a clinical trial, may not feel much pressure to increase their doctors' income. However, the same patients may well feel pressure to avoid signaling distrust to their doctors.

Panhandler effects have been shown in contexts in which (a) advice was obviously self-serving to the advisor and (b) compliance with that advice was obviously self-sacrificial to the advisee (Sah, Loewenstein, et al., 2013). In such contexts, insinuating that the advice was self-serving would be redundant. In other words, panhandler effects are more likely than insinuation anxiety effects when it is more appropriate to offer self-serving advice—for example, with used car salespersons, real estate agents or door-to-door fund-raisers. Consider that car shoppers are unlikely to trust used car salespersons. Salespersons likely know that most buyers do not fully

trust them, and car shoppers know that salespersons know they are not trusted. Hence, a car seller's disclosure to a potential customer that he/she needs to sell a car to meet his/her quota and retain his/her job would be unlikely to elicit insinuation anxiety from the shopper, but it could produce a panhandler effect, if framed effectively by the salesperson. On the other hand, if the car dealer is a dear friend, turning down the offer—pitched as an exceptional opportunity—could produce insinuation anxiety. That is, rejecting the car could be interpreted as a signal that the customer does not believe the seller has prioritized the altruism of friendship over the desire to sell the car at a profit. Our point is that, in many important social contexts, advice is often supposed to be helpful to the advisee, and, in these, insinuation anxiety is likely to be a greater concern. In this paper, we document the existence of insinuation anxiety as a reason for perverse compliance with conflicted advice, and identify one policy—external disclosure—that can mitigate it.

In the studies presented here, we first examined the occurrence and impact of insinuation anxiety in three medical scenarios in which patients were unsure whether the advice was self-serving. We then moved to the field and a more general advice-taking context in which advisor–advisee interactions were face-to-face, and in which following or not following advice had material consequences. In Studies 2–4, we explicitly tested for the panhandler effect as well as insinuation anxiety in order to distinguish between the two effects.

The Experiments

In the first three scenario experiments, participants adopted the perspective of a patient receiving recommendations from a doctor who presented two options and recommended one of them. The main experimental manipulation varied whether the physician did or did not disclose

to the patient that the recommended option would yield a personal benefit to the physician. Our

main predictions were that the disclosure would (1) reduce trust but (2) increase pressure to

follow the recommendation due to insinuation anxiety. The fourth field experiment involved real

monetary stakes and examined advice taking when advisor–advisee interactions were face-to-

face. We also examine the disclosure of small versus large COIs (Study 2), and mandatory

versus voluntary disclosure (Study 3).

Experiment 1: Disclosing Financial Conflicts of Interest

Method

   Participants. Participants ($N = 112$; 38.7% female, median age category = 26–35 years[1])

were recruited for $0.10 each on Amazon.com's Mechanical Turk (MTurk) website, an online

labor system that enables researchers to conduct online experiments with a sample more diverse

than undergraduate students (see Goodman, Cryder, & Cheema, 2012).

   Procedure. Participants were instructed to adopt the perspective of a patient and to read

a brief description of that patient's symptoms. Then, they listened to a voice recording of a

doctor (actually an advanced medical student playing the role of a physician) who described two

treatment options: to enter a clinical trial, as the doctor recommended, or to continue to use a

standard drug. The participants were then asked to decide whether they would follow the

doctor's recommendation or stick with their current medication. In the nondisclosure condition,

the patient received no further information. In the disclosure condition, the recording was

initially identical, but, after delivering his recommendation, the doctor revealed a financial COI:

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[1] Age was measured in categories rather than in absolute values.

"I do think it is important, however, to let you know I will receive a referral fee from the manufacturer of the drug if I refer you for the clinical trial." After listening to the doctor, the participants indicated their agreement with three statements relating to trust in the relationship using a 5-point Likert scale: "My doctor has my best interests at heart," "I trust my doctor's recommendation," and "I will continue to see the doctor in the future." They were also asked to respond to one statement about insinuation anxiety: "I worry that the doctor will believe I think he is biased if I turn down his recommendation."

Results and Discussion

Responses to the three trust statements were highly correlated ($p < .001$) and loaded onto a single factor (Cronbach's $\alpha = .83$) and so were averaged to give a composite measure of trust.[2] Compared to participants who did not receive disclosure, those who received disclosure reported significantly less trust, ($M = 3.68$, $SD = .87$ vs. $M = 4.01$, $SD = .61$), $F(1, 110) = 5.73$, $p = .02$, $\eta_p^2 = .05$, yet greater insinuation anxiety, ($M = 3.13$, $SD = 1.13$ vs. $M = 2.41$, $SD = .94$), $F(1, 110) = 12.90$, $p < .001$, $\eta_p^2 = .10$. No difference was reported between conditions regarding compliance with the doctor's advice, ($M = 3.30$, $SD = 1.16$ vs. $M = 3.48$, $SD = 1.17$), $F(1, 110) =$

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[2] Although the three trust items were highly correlated, one of the questions regarding continuing to see the doctor in the future could be considered a behavior intention and may tap into a different psychological construct than our other two indicators of trust. Therefore, we also conducted analyses using responses from each trust question separately (in this and the following experiments) and found similar results. For the sake of parsimony, we report the combined measure of trust in all experiments. In experiment 4, we also piloted additional questions on trust at the end of the experiment based on Mayer, Davis and Schoorman (1995) tri-dimensional trust measure (see supplementary materials).

.71, $p = .40$, $\eta_p^2 = .006$, suggesting that the increased pressure to comply associated with insinuation anxiety and the decreased desire to comply as a result of decreased trust approximately offset each other.[3]

Since insinuation anxiety is likely to be reduced in this hypothetical setting, of greater importance for understanding the mechanism and its potential effect on behavior is to determine whether the opposing forces (trust and insinuation anxiety) mediated the relationship between disclosure and the decision to take the doctor's advice. Bootstrapping mediation analyses (Hayes, 2013; Preacher & Hayes, 2008) for estimating direct and indirect effects with multiple mediators revealed that the opposing forces fully mediated the relationship between disclosure and compliance (Figure 1). Furthermore, the analysis revealed that the indirect effect of disclosure was significant (with 95% confidence intervals (CI) excluding zero) for both trust (-.36), 95% CI (-.66, -.07), and insinuation anxiety (.15), 95% CI (.03, .34).

Our causal model, therefore, demonstrated that insinuation anxiety is present and that both trust and insinuation anxiety significantly affected, in opposite directions, the decision to take the doctor's advice. Whether or not this anxiety ultimately alters behavior, and in which direction, depends on the relative strength of the two forces.

Experiment 2: Disclosure of No Conflict of Interest

To interpret whether nondisclosure in the previous experiment led patients to believe the doctor had no COI, the second experiment also included a "disclosure of no conflict" condition in which the doctor explicitly stated that he had no personal agenda in recommending the

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[3] Correlations (and other information) among the variables for all four experiments are presented in eTable 1 in the supplementary materials.

treatment. If nondisclosure leads patients to believe the doctor has no COIs, the results for disclosing no conflict should be equivalent to those for nondisclosure. If, however, disclosing no conflict increases trust and decreases insinuation anxiety, this result suggests that at least some patients may already be concerned about bias in the advice they receive. Past studies have shown that advisors who declare the absence of conflicts are trusted more and this signal improves the advisor-advisee relationship (Sah & Loewenstein, 2014).

Furthermore, doctors often insist that small gifts do not tarnish the objectivity of their advice (Sah & Larrick, 2015; Wazana, 2000). By manipulating the magnitude of the conflict, this experiment also investigated whether larger COIs create greater distrust and also greater insinuation anxiety or whether patients view COIs in a binary way, registering only their presence or absence. Finally, since non-financial as well as financial COIs constitute important influences on a doctor's behavior, we explored the effect of the disclosure of a non-financial COI. Again, we predicted that disclosure would exert opposing forces on the advisee: increasing pressure to comply due to insinuation anxiety, combined with decreased trust.

We also included a question to measure the panhandler effect in order to directly contrast the existence of this effect to insinuation anxiety.

Method

Participants. Participants were 485 alumni at one of the author's universities (45.9% female; median age category = 36–45 years). We offered each participant a university T-shirt if we achieved a response rate of over 80%. We emailed 736 alumni and achieved a 65.9% response rate (but nevertheless gave all respondents T-shirts).

Procedure. As in Experiment 1, the participants listened to a voice recording from the doctor offering two treatment options: to take a standard drug that the patient had taken previously or, as the doctor recommended in all conditions, to enroll in a clinical trial. There were four conditions: (1) nondisclosure, in which no further information was given; (2) disclosure of no-conflict, where the doctor stated, "But let me also say that I have no personal interest, I have nothing to gain from you entering the trial"; (3) disclosure of a small COI, communicated by: "I do think it is important to let you know that I am part of the research team conducting the clinical trial and we need more people to participate in order for me to publish our results in a top medical journal. So it would be helpful for my career if you could participate in the trial. But let me also say that there are plenty of other patients who are eligible"; and (4) disclosure of a larger COI, in which the doctor said the same first sentence as in the third condition but then gave a different stronger ending: "So it would be tremendously helpful for me and my career if you could participate in the trial. We are only a few participants away from completing the study."

As in Experiment 1, after listening to the doctor, we measured the patients' trust using the same three questions (Cronbach's $\alpha = .79$) and measured insinuation anxiety, also using the same question as in Experiment 1. We also included an additional question to measure the panhandler effect. The question was worded similarly to previous studies that measured this effect (Sah et al., 2013): "I wanted to help the doctor by following his advice."

Results and Discussion

There were significant differences between the four conditions in terms of trust, insinuation anxiety, and taking the doctor's advice, but there was no significant difference for the

panhandler effect (Table 1). This shows that insinuation anxiety is distinct from the panhandler

effect, because the former is present while the latter is absent in this situation.

Participants appeared to appreciate those doctors who disclosed the fact that they had no

personal agendas (see Table 1 and Figure 2). Compared to nondisclosure, participants were

significantly more likely to trust the advice ($p = .01$) and less likely to report feeling insinuation

anxiety ($p = .03$). Thus, the doctors' reassurances that they had no personal agenda did reassure

patients. This suggests that biased advice may already be a concern for some participants, and

that these participants may not fully trust their doctor's advice. Similar to other studies in a

nonmedical context, this study shows that disclosure of a lack of self-interest can increase trust

(Sah & Loewenstein, 2014).

The magnitude of the COI had no effect in this scenario;[4] disclosure of both smaller and

larger COIs led to similar levels of decrease in trust and increase in insinuation anxiety. With

disclosure of a conflict (either large or small), participants trusted the advice less (both $ps < .006$)

and reported greater insinuation anxiety (both $ps < .008$) compared to nondisclosure. Therefore,

these results again demonstrate (this time with a non-financial COI) that disclosure results in

conflicting forces.

In this experiment, participants' introspections led them to believe that, with COI

disclosure, they would be less likely to follow the physician's advice, i.e., the first force

(decreased trust) was greater than the second force (insinuation anxiety). Mediation analyses (in

Table 2) showed that both forces significantly affected the decision to take the doctor's advice.

The effect of disclosing a conflict on compliance was significantly reduced when the mediators

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[4] Further research could examine whether different magnitudes of *financial* COIs would make a difference to

patients.

(trust and insinuation anxiety) were included in the model; the indirect effect was significant for each type of disclosure and mediator (resulting in 95% CIs that excluded zero). This presents further evidence that COI disclosure leads to significantly decreased trust and increased insinuation anxiety and that both of these factors are significant mediators and explain the relationship between COI disclosure and taking the doctor's advice.

Experiment 3: Mandatory and External Disclosure

This experiment included two extra conditions in addition to nondisclosure and (personal) COI-disclosure: external disclosure and legally required disclosure.

External Disclosure

External disclosure—disclosure from a third party—gives advisees the same information about the COI as personal disclosure but from a different source. If disclosure consists of two components—an informational component that decreases trust (due to suspicion that the advice may be biased) and a social component that could increase the pressure to comply (Sah, Loewenstein, et al., 2013), then the informational component (causing a decrease in trust) should be similar whether the information comes directly from the advisor, from an external source, from a legally required source, or even from a voluntary source. However, the social component may change depending on the source of the disclosure, i.e., it may be greater with personal rather than external disclosure. With personal disclosure received directly from an advisor, lack of trust should be a more salient explanation for advice-rejection than in the case of external disclosure, in which there is no explicit communication about the conflict. Advice-rejection with external disclosure would convey less about the advisor's integrity since external disclosure is less salient to the advisor (and, as we opened this paper suggesting, there are many reasons to reject advice

when it is not accompanied by salient disclosure). Therefore, with external disclosure, we predicted that trust would decrease similarly to that seen with personal disclosure but that insinuation anxiety would be less than with personal disclosure.

Legally Required Disclosure

To rule out an alternative account of the results already presented—that anxiety is produced with disclosure only because the doctor appears especially forthcoming (via voluntary disclosure) and that the patient is reluctant to let the doctor down by rejecting the advice—we also included a condition in which disclosure was legally required. Since the voluntary / mandatory distinction does not affect the salience of the corruption insinuation for the patient turning down the advice, we predicted that insinuation anxiety would be similar whether the disclosure was required or not. One could hypothesize that voluntary personal disclosure would create more trust than legally required disclosure (and even external disclosure). On the other hand, as we have mentioned, trust may not vary due to *how* the COI disclosure is communicated but instead may decrease similarly; this is because the disclosure provokes the same uncertainty about the quality of the advice. We therefore predicted that legally required disclosure would lead to a similar decrease in trust and a similar increase in insinuation anxiety as personal disclosure.

Method

Participants. Participants ($N = 785$, 41.4% female; median age category = 26–35 years) were recruited for $0.25 from MTurk.

Procedure. Participants again listened to a voice recording from the "doctor," as in the first two experiments. We varied the scenarios to verify the robustness of the insinuation anxiety

effect. One of the new situations ("C" for colonoscopy) involved the doctor's recommendation to have a colonoscopy "early," contrary to the colonoscopy society's guidelines. The other new scenario ("A" for ambulatory center) involved the doctor's recommendation to obtain minor surgery at a distant ambulatory surgery center, rather than the nearby hospital where the patient had had a similar successful treatment previously.

Patients were randomly assigned to one of four conditions:

(1) "Personal disclosure," in which the doctor said (C scenario): "However, I should tell you that I receive a payment for every colonoscopy I perform"; or (A scenario): "I should notify you that I have a partnership interest in the ambulatory surgery center and I will receive a larger payment if you have the procedure done at this surgery center rather than at the hospital."

(2) "Required disclosure," in which participants received the same personal disclosure from their doctor and were also instructed that: "Your doctor will tell you about a conflict of interest because he is required to do so by law" (displayed in italics and red font when the participant was listening to the doctor).

(3) "External disclosure," in which participants read, "Before you walk into the doctor's office, the receptionist hands you a sheet of paper that reads…," which was followed by (C scenario): "The director of the clinic would like to disclose the following information to you. Each doctor on this premise receives a payment for every colonoscopy that the doctor performs"; or (A scenario): "The medical director would like to disclose the following information to you. Some doctors in this clinic have partnership interests in the Ambulatory Surgery Center and will receive larger payments if a patient receives treatment at this center instead of the hospital… Dr. Brooks is listed among the doctors with a partnership interest in the Ambulatory Surgery Center."

(4) "No Disclosure," in which the patient received no COI information.

Again, after listening to the doctor, we measured the patients' trust (Cronbach's α = .88), their insinuation anxiety, the panhandler effect, and whether the patient would take the doctor's advice.

Results and Discussion

There were significant differences across the four conditions for all our measures—trust, insinuation anxiety, panhandler effect, and taking the doctor's advice. In contrast to Experiment 2, there was not only an absence of the panhandler effect but a decrease in felt pressure to help the advisor (Table 3). Participants who received disclosure in any form reported less trust than those with nondisclosure (all *ps* < .001, see Table 3 and Figure 3). All three disclosures (personal, required, and external) also resulted in significantly greater insinuation anxiety than nondisclosure (all *ps* < .03).

As predicted, however, when disclosure was externally provided, there was significantly less insinuation anxiety than there was with personal or required disclosure (*p* = .03), although it was still higher than with nondisclosure (*p* = .03). Also as predicted, required disclosure affected the advisee in much the same way as personal disclosure: it led to a similar decrease in trust and a similar increase in insinuation anxiety.

In this study, the panhandler effect was significantly lower with disclosure (all types of disclosure: personal, required, and external) compared to nondisclosure (all *ps* < .001). There was no difference in the panhandler effect among the different types of disclosures. Although we expected the panhandler effect to be nonexistent, the decrease with disclosure may represent the advisees' surprise that they could possibly be asked to help the doctor in this situation (this

can be compared to a commercial situation in which it is more acceptable for an advisor to be self-serving). This provides further evidence that, in this context, disclosure's increased pressure to comply with the doctor operates through the different mechanism of insinuation anxiety versus the panhandler effect.

As in Experiment 2, participants with disclosure (personal, required, or external) indicated that they would be less likely to comply compared with nondisclosure (all $ps < .001$). However, with personal and required disclosure, participants were significantly more likely to comply than with external disclosure ($p = .002$). Therefore, when insinuation anxiety was reduced (in external disclosure versus personal and required disclosure), compliance was also reduced.

Mediation analysis (Table 2) again revealed that the two variables (trust and insinuation anxiety) mediated the association between disclosure and compliance. The effect of disclosure on compliance was significantly reduced when the two mediators were included in the model; the specific indirect effects of each mediator were significant (each 95% CI excluded zero). Therefore, both trust and insinuation anxiety affected, in opposite directions, the decision to follow the doctor's advice.

Although we believe that the absolute magnitude of insinuation anxiety may be greater in a real-world context, the differences between the disclosure conditions are informative. Specifically, information provided by a third party about the doctor's COI may allow patients to reject the recommendation (arguably the intended purpose of disclosure) without sending a mutually embarrassing signal of distrust to the doctor. Furthermore, these signals appear distinct from panhandler effects.

In these three medical scenarios, we document evidence of the existence of 'insinuation anxiety' that arises with COI disclosure. Further, insinuation anxiety clearly mediated the relationship (in the opposing direction to trust) between disclosure of a COI and taking the doctor's advice. We also found that the panhandler effect was nonexistent (or was at least greatly diminished) in these situations but advisees feel pressured to comply with the advice due to the process of insinuation anxiety. When it came to actual compliance, more specifically, we observed via mediation analyses that disclosure produced conflicting effects: a decrease in compliance with advice due to a decrease in distrust but an increase in compliance due to insinuation anxiety. In these scenario studies, the net effect of these two forces on compliance, comparing disclosure to nondisclosure, was either zero or a decrease in compliance, which may reflect the fact that people underestimate the discomfort of turning down advice in this hypothetical setting. In the next study, which involved real advice from a real advisor who stood to benefit from compliance, the net effect of these forces was a significant increase in compliance with less trusted advice.

Experiment 4: Face-to-Face Disclosure with Real Choices and Monetary Consequences

In two of the three prior experiments, the reduction of trust offset the impact of insinuation anxiety, leading to reduced reported compliance with the physician's advice. In real advisor-advisee interactions, however, insinuation anxiety is likely to be stronger than in hypothetical scenarios. People who are not currently feeling an emotion such as anxiety often underestimate the impact of such emotion on behavior (Van Boven, Loewenstein, Welch, & Dunning, 2012; Wray & Stone, 2005). To examine the strength of insinuation anxiety in a real face-to-face interaction, we conducted a field experiment in which an advisor (purportedly a

professional at work) gave advice to an advisee, who then made a decision with real material

consequences. We predicted that, with disclosure in this situation, insinuation anxiety would be

stronger than in the hypothetical scenarios to the point that it would increase compliance despite

decreased trust.

The advisor in this experiment was trained to play the role of a professional who is

(presumably) there to help the advisee and who is demonstrably more knowledgeable. This is an

important distinction compared to prior field studies that examined the panhandler effect in

which both parties were equal members of the public and were similarly knowledgeable (Sah,

Loewenstein, et al., 2013). Although it would be interesting to examine insinuation anxiety in an

actual medical, or other, real-world professional context in which the advisors supposedly has

the best interests of the advisee, due to ethical constraints attached to conducting such an

experiment, we aimed to simulate a situation in which the advisor appeared to be a professional

in good standing who would give the advisee helpful, face-to-face advice. This context for

studying insinuation anxiety examined real behavior with monetary consequences for both

advisor and advisees in which, however, advisees would be unlikely to be seriously harmed by

suboptimal advice or by experiencing insinuation anxiety. Although we distinguished the

experiment from prior experiments that were designed to produce the panhandler effect (Sah,

Loewenstein, et al., 2013), e.g., by using advice that was not clearly suboptimal for the advisee,

there is a bit more of a "sales" context here than in prior medical settings, so we acknowledge

that insinuation anxiety and the panhandler effect could co-occur.

Method

  Participants. Participants were passengers ($N = 253$, 58% female, 87% Caucasian, M_{age} = 44.57, $SD = 17.17$) on a ferry from/to Connecticut and Long Island.

  Procedure. A trained confederate (a middle-aged Caucasian male, dressed in business casual) played the role of advisor, and asked advisees to take a short survey for $5. Upon agreement, participants filled out a one-page survey comprising innocuous questions about the ferry. After this, advisees were given an opportunity to indicate how they would like to be paid—either with $5 cash (as initially offered) or a drawing for a mystery cash lottery, which offered somewhere between 0 to $10. The expected value of the lottery was $4.72. In all conditions, the advisor was rewarded with a $0.50 bonus for every advisee who chose the mystery cash lottery, so the advisor, although a trained confederate, did in fact have a real interest in guiding participants to play the lottery.

  Advisees were randomized into four conditions: nondisclosure, COI-disclosure, non-COI disclosure (i.e., a disclosure of something other than the COI), and no-advice. Aside from the no-advice condition (in which participants were not given any recommendation), the advisor was instructed to recommend the mystery cash lottery using the same scripted recommendation: "I've seen a bunch of the payouts of the drawing, and I suggest you go for that option [pointing to the lottery]; it often pays nicely." In the nondisclosure condition, the advisor gave no further information; in the COI-disclosure condition, the advisor notified the advisee of his conflict by first saying, "I should tell you that I get a small bonus if you pick the drawing. That said..." before giving the scripted recommendation. In the non-COI disclosure, the advisor first disclosed an alternative piece of information to rule out the possibility that any observed increase

in compliance was due to the extra time spent conversing with the participant: "I should tell you that there is some risk if you pick the drawing. That said..."

After making their choice, participants were told that the researchers conducting the survey were also interested in the quality of the interaction they had with the interviewer.[5] Using a 7-point Likert scale, the participants completed one item that measured their trust of the advisor: "The interviewer placed his own interests above mine" (reverse coded), and two insinuation anxiety measures: "I felt uncomfortable, because I suspected the interviewer's recommendation may have been biased," and "I was concerned that the interviewer would believe that I thought he was biased if I turned down his recommendation" (Cronbach's $\alpha = .92$). We also measured the panhandler effect using the statement, "I felt pressure to help my interviewer." The advisees also responded to a more general discomfort statement, which could capture insinuation anxiety, the panhandler effect, or both: "It was/would have been uncomfortable to turn down the interviewer's recommendation." Participants also rated how much they liked their interviewer and how reputable they found the lottery. They then sealed their responses in an envelope that they knew would go directly to the researchers (i.e., would not be seen by the interviewer/advisor) and finally received either $5 cash or their earnings from the mystery prize lottery, which was determined by the advisor's randomized pay sheet.

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[5] Due to the different nature of the study, our measures varied the wording slightly to make it appropriate for the new context.

Results

Advisee Choice

There was a significant difference in the advisees' choice of payment across the four conditions, $\chi^2(3, N = 253) = 22.47$, $p < .001$ (Table 4). In the no-advice condition ($n = 61$), only 8.2% of participants chose the lottery, revealing that the $5 cash was the preferred option in the absence of any recommendation. There was no significant difference between the following three conditions: the aforementioned no-advice condition in which 8.2% chose the lottery; the nondisclosure condition ($n = 70$) in which a recommendation was given for the lottery with no additional information (20.0% of advisees picked the lottery); and the non-COI disclosure condition ($n = 60$) in which advisees received a recommendation for the lottery without information on the conflict of interest but in which the advisor revealed there could be some risk (16.7% of advisees picked the lottery), $\chi^2(2, N = 191) = 3.68$, $p = .16$.

There were significant differences between the COI-disclosure condition ($n = 62$), in which the advisees received a recommendation to pick the lottery but were also informed about the advisor's conflict of interest (41.9% of participants chose the lottery), and the other conditions: the nondisclosure condition, $\chi^2(1, N = 132) = 7.49$, $p = .006$, the non-COI disclosure condition, $\chi^2(1, N = 122) = 9.36$, $p = .002$, and the no-advice condition, $\chi^2(1, N = 123) = 18.57$, $p < .001$.

Interestingly, although we did not predict gender differences in this study (gender effects were not present in the prior three medical scenarios), we found greater effects for women than men (Table 4 displays advisee choice for both women and men separately). For women, receiving advice to take the lottery in the nondisclosure and non-COI disclosure conditions led to 17.8% taking the lottery, while receiving the same advice with a disclosure of the COI led to

47.4% taking the lottery, $\chi^2(1, N = 111) = 10.85, p < .001$. For men, the percentages were 21.6%

and 28.6% respectively, $\chi^2(1, N = 72) = 0.40, p = .53$. We therefore report the results for advisee

trust, insinuation anxiety and panhandler effects both with and without gender as a variable.

Trust

Advisees felt significantly less trust in the advice given with a COI-disclosure compared

to the other two advice conditions (non-COI disclosure and nondisclosure), ($M = 4.75, SD = 1.52$

vs. M = 5.19*, SD* = 1.35)*, F*(1, 184) = 3.97*, p* = .048*, η_p^2* = .02. Including gender as a variable, a

2 (COI disclosure vs. non-COI disclosure and nondisclosure conditions) x 2 (women vs. men)

ANOVA on advisee trust in the advisor revealed a significant interaction, $F(1, 175) = 4.07, p =$

$.045, \eta_p^2 = .02$, but no other significant effects. Simple effects analysis revealed that women felt

significantly less trust in the COI-disclosure condition ($M = 4.55, SD = 1.50$) compared to the

non-COI disclosure and nondisclosure conditions ($M = 5.30, SD = 1.43$)*, F*(1, 175) = 6.89*, p* =

$.009, \eta_p^2 = .04$, whereas there was no significant difference for men in trust between the COI-

disclosure condition and the other advice conditions, ($M = 5.19, SD = 1.54$ vs. $M = 5.00, SD =$

1.26)*, F*(1, 175) = 0.27*, p* = .61*, η_p^2* = .002.

Insinuation Anxiety

Advisees in the COI-disclosure condition felt greater insinuation anxiety than in the other

advice conditions although this did not reach significance overall, ($M = 2.89, SD = 1.07$ *vs. M* =

2.59*, SD* = 1.04)*, F*(1, 184) = 3.28*, p* = .072*, η_p^2* = .02. When gender was included as a variable,

the 2 (COI disclosure vs. non-COI disclosure and nondisclosure conditions) x 2 (women vs.

men) ANOVA on insinuation anxiety also revealed a significant interaction, $F(1, 175) = 4.80, p$

$= .03, \eta_p^2 = .03$, and no significant main effects. Simple effects analysis again revealed that women in the COI-disclosure condition ($M = 2.97, SD = 1.14$) felt greater insinuation anxiety than in the other advice conditions ($M = 2.42, SD = 1.09$), $F(1, 175) = 6.98, p = .009, \eta_p^2 = .04$, whereas there was no significant difference in insinuation anxiety for men between the COI-disclosure condition and the other advice conditions, ($M = 2.71, SD = 0.97$ vs. $M = 2.91, SD = 1.14$), $F(1, 175) = 0.53, p = .47, \eta_p^2 = .003$.

Panhandler Effect

There was no significant difference between the COI-disclosure condition and the other advice conditions for the panhandler effect ($M = 2.85, SD = 1.21$ *vs.* $M = 2.61, SD = 1.16$), $F(1, 184) = 1.78, p = .18, \eta_p^2 = .01$ overall. However, with gender included as a variable, again there was a significant interaction for the panhandler effect, $F(1, 175) = 5.07, p = .03, \eta_p^2 = .03$, and no significant main effects. Again, women in the COI-disclosure condition ($M = 2.97, SD = 1.24$) felt greater panhandler effects than in the other advice conditions ($M = 2.47, SD = 1.19$), $F(1, 175) = 4.63, p = .03, \eta_p^2 = .03$, whereas there was no significant difference between the conditions in the panhandler effect for men, ($M = 2.52, SD = 1.08$ vs. $M = 2.88, SD = 1.08$), $F(1, 175) = 1.40, p = .24, \eta_p^2 = .008$.

Other measures

There were no other significant differences between the COI disclosure condition and the other advice conditions for the other questions, general discomfort (all $ps>.20$), likability of the interviewer (all $ps > .48$), and how reputable (all $ps > .57$) participants found the lottery.

Mediation analysis

We conducted a mediation analyses to examine the significance of the mediators trust, insinuation anxiety, and the panhandler effect, in explaining the relationship between the COI-disclosure and advisee choice. The mediation results for trust and insinuation anxiety were directionally as expected but not quite significant because the 95% CI just included zero; trust (-.03), 95% CI (-.24, .08) and insinuation anxiety (.05), 95% CI (-.06, .36). Mediation for the panhandler effect (-.01) was also nonsignificant, 95% CI (-.21, .06).

Discussion

In this face-to-face context in which advice was real and had monetary consequences, we observe that with COI-disclosure there was significantly increased compliance with advice (41.9% of advisees took the lottery) compared to each of the other three conditions. Without advice, very few people took the lottery. When advised to choose the lottery, some complied, but advice accompanied with COI-disclosure resulted in significantly greater compliance. As discussed earlier, the advisor was not as professional as a doctor might be expected to be, which means that the advisee's presumption of the advisor's beneficence might be expected to be lower in this experiment. Thus, as we expect, panhandler effects as well as insinuation effects emerge.

Also, all the main dependent variables of interest (compliance, trust, and insinuation anxiety) were highly significant in the predicted directions for females but were reduced or non-significant for males. Investigating the specific reasons for these significant gender effects are outside the scope of this paper. Perhaps women had higher expectations that the advisor would put their interests first and, therefore, felt higher insinuation anxiety, whereas, for men, the assumption of advisor beneficence in this situation may have been lacking. Or perhaps these

gender effects emerged in the face-to-face interactions due to perceived differences in authority, power or simply similarity between the advisor and women advisees, or differing expectations of cooperativeness (Cialdini, 2006; Galinsky & Schweitzer, 2015; F. Gino, Shang, & Croson, 2009; Kray, Reb, Galinsky, & Thompson, 2004; Kray, Thompson, & Galinsky, 2001; Walters, Stuhlmacher, & Meyer, 1998). Future research could examine the gender differences and also study how advisor-advisee authority, power and status impact trust in the advisor and insinuation anxiety.

General Discussion

This paper documents the existence of an "insinuation anxiety" that can arise in advisees' minds with conflict of interest (COI) disclosure. The four experiments show that COI disclosure decreases trust in the advice, but can increase pressure to comply due to anxiety about insinuating that the advisor may be biased. Insinuation anxiety is distinct from pressures to help advisors and can augment panhandler effects or be an important factor when panhandler effects are not present. Our aim in this paper is to document the presence of insinuation anxiety as an important new mechanism that arises with COI-disclosure and impacts advice recipients.

In Experiment 1, we introduced insinuation anxiety as a significant factor mediating advisee choice and decision making. In Experiment 2, we demonstrated that insinuation anxiety is distinct from the panhandler effect, because the former was present while the latter was absent. We also revealed that participants felt less insinuation anxiety and greater trust if the doctor disclosed the absence of conflicts. This is encouraging because a disclosure policy may lead advisors to avoid COIs so that they can disclose that they have no conflicts (Sah & Loewenstein, 2014), which would be beneficial both in decreasing potential bias and increasing (justifiable)

trust. In Experiment 3, explicitly stating that the disclosure was required by law did not substantially affect the burdens experienced by participants. Importantly, we found evidence that when a salient external source made the disclosure, as opposed to the advisor making the disclosure directly, it reduced insinuation anxiety and compliance. Reducing insinuation anxiety is likely to be even more important in real-world contexts in which there may be greater power asymmetry or preexisting relationships that the advisee wishes not to damage by rejecting the advice.

In Experiment 4, we move from the controlled lab environment to examine real world behavior. In our final experiment, when the disclosure was personal and face-to-face, both insinuation anxiety and compliance with disclosure were greater, to the point where disclosure significantly increased compliance with biased advice. We found that our effects were stronger for women than men, which raises several questions for future research on individual differences in vulnerabilities to the phenomenon described here.

Limitations and Future Research

While we have established that insinuation anxiety is a concern for advice recipients and a separate phenomenon from other perverse effects of disclosure, open questions remain as to what extent this anxiety impacts ultimate compliance with distrusted advice and the extent that both advisors and advisees are aware of it. If advisors are aware of it, it is possible that they could use it strategically to increase compliance with conflicted advice. If advisees are aware of it, they might engage in efforts to diminish its influence—e.g., by coming up with persuasive explanations for why they rejected the advice. In Studies 1-3, insinuation anxiety was a concern for the participants, but it did not actually overcome decreased trust and increase compliance

with advice. In Study 4, however, COI disclosure did increase compliance as well as distrust and insinuation anxiety. However, in the 'messy' real world, the mediation analysis was not conclusive as to which effect ultimately increased compliance. It is likely that multiple psychological processes and various modes of reasoning and influence arise with advice-taking as has been shown in other research (Bonaccio & Dalal, 2006; Cialdini, 2006; Deutsch & Gerard, 1955; Feng & MacGeorge, 2006; Francesca Gino, Brooks, & Schweitzer, 2012; Sah, Moore, & MacCoun, 2013; Yaniv, 2004). Importantly, our paper serves as an existence proof of insinuation anxiety— a previously unrecognized effect of COI disclosure on advice recipients, and to at least show that it can weigh on advisees' minds and affect the relationship between advisors and advisees.

An interesting avenue for future research is the extent to which individual and demographic differences play a role. For example, in Experiment 4, the effects were present for women but less so with men. Future research could examine the gender differences not only between advisees, but also with advisors and interactions of gender between advisor-advisee pairs. It is also possible that gender is a proxy for other differences, such as authority, power or status or heightened expectations of cooperation, and these variables are also a fruitful avenue for future research. There are sufficient signs that insinuation anxiety is a concern for many of the consumers whom disclosure purports to protect but the latter finding suggests that disclosure may disproportionately harm advisees who are most vulnerable with less authority, power or status in society.

Managerial and Policy Implications

Diverse research has documented different ways that COI-disclosure can backfire, some of these involving its effect on advisors (e.g., Cain et al., 2005; Loewenstein, Sah, & Cain, 2012), and others involving effects on advice recipients (e.g., Kesselheim et al., 2012; Sah, Fagerlin, & Ubel, 2015; Sah, Loewenstein, et al., 2013).

The adverse consequences of disclosure go beyond its effects on trust, the relationship, and (possibly) increased compliance. Disclosure may also cause people to ignore advice that, while conflicted, would, in fact, have been helpful (Kuang, Weber, & Dana, 2007; Li & Madarász, 2008; Sah & Feiler, 2014). People need advice from experts, and disclosure could have disastrous consequences for people who need good medical or financial advice but who ignore advice that is actually beneficial despite being conflicted, or who avoid soliciting advice out of either distrust or fear of getting trapped in the kind of situations documented in this paper.

Policies that often seem like "obvious" ways of informing and protecting consumers sometimes have unintended consequences. For example, proponents of calorie labels might assume consumers will use the labels as the proponents themselves would—to cut calories—but those who are most in need of weight reduction often ignore the labels or perhaps they may even use the calorie labels, contrary to the way they were intended, for example, to maximize calories per dollar. The consumers who use the nutritional information as intended tend to be more educated and already eating healthy foods (Tavernise, 2014). This is reminiscent of the notion that savvy, experienced players can better use disclosed information (Koch & Schmidt, 2009; Malmendier & Shanthikumar, 2007). While this notion may be reassuring, it also suggests that less savvy and less educated people might be more vulnerable to the unintended consequences of COI-disclosure.

Another example of a policy that could have a perverse effect is mandatory second opinions. Although multiple opinions are shown to be beneficial in many different domains, recent research demonstrates unintended effects on primary advisors: Primary advisors adopt a profit-maximizing frame and give even more biased advice when they become aware that their advisees may receive a second opinion (Sah & Loewenstein, 2015). Other policies that did not work as intended include cigarette health warning labels, which were supposed to inform consumers of the dangers of tobacco but became a litigation shield for big tobacco to use against consumers who "had been warned."

Despite the negative effects of disclosure documented here, we generally support policies that increase transparency. Mandatory disclosure can potentially pressure professional societies to reduce the prevalence and severity of COIs and increase the likelihood that advisors themselves will eschew conflicts so as to report their absence (Sah & Loewenstein, 2014). External disclosures may be useful if they are less socially salient than personal disclosures and reduce insinuation anxiety. Furthermore, it could be argued that advisees have a right to transparency and to know whether or not their advisors have COIs. Indeed, some advisees may be able to use the disclosed information while minimizing the negative social pressures that information may bring.

All things considered, therefore, disclosure may still be a net positive in the absence of anything better. However, the current research adds to a body of existing research suggesting that disclosure is not the panacea many take it to be; it can fail to achieve its intended purposes and can even have perverse effects. This paper documents the existence of insinuation anxiety that arises from COI disclosure and causes advisees to consider how the advisor will interpret the rejection of their advice. This consideration should be absent from the important decisions

advisees make when it comes to important matters such as health and financial decisions. It is the advisees who need protecting, not the advisor's feelings.

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Table 1

Outcomes from Experiment 2

	Non-Disclosure (ND)	Disclosure of No Conflict (D_NC)	Disclosure of a Small Conflict (DS)	Disclosure of a Large Conflict (DL)	Effect of Condition	D_NC vs. ND	DS vs. ND	DL vs. ND	DL vs. DS
	Mean (standard deviation)				$F(3,481)$ statistic, p-value, η_p^2	$t(481)$ statistic, p-value			
Trust	3.63 (.60)	3.86 (.52)	3.24 (.84)	3.17 (.80)	$F = 26.27$ $p < .001$ $\eta_p^2 = .14$	$t = 2.54$ $p = .01$	$t = -4.26$ $p = .006$	$t = -4.97$ $p < .001$	n.s.
Insinuation Anxiety	1.98 (.92)	1.71 (.79)	2.32 (1.14)	2.37 (1.08)	$F = 12.24$ $p < .001$ $\eta_p^2 = .07$	$t = -2.16$ $p = .03$	$t = 2.66$ $p = .008$	$t = 3.02,$ $p = .003$	n.s.
Panhandler Effect	2.24 (1.02)	2.28 (.99)	2.29 (1.05)	2.25 (.99)	$F = 0.07$ $p = .98$ $\eta_p^2 < .001$	-	-	-	-
Take Doctor's Recommendation	3.01 (.90)	3.07 (1.04)	2.69 (1.09)	2.51 (1.00)	$F = 8.42$ $p < .001$ $\eta_p^2 = .05$	n.s.	$t = -2.48$ $p = .014$	$t = -3.78$ $p < .001$	n.s.

Note. All responses were on a labeled 5-point Likert scale, strongly disagree/very unlikely (1) to strongly agree/very likely (5).

Table 2

Multiple Mediation Analyses for Experiment 2 and 3

	Experiment 2			Experiment 3		
	Disclosure of No Conflict	Disclosure of a Small Conflict	Disclosure of a Large Conflict	Personal Disclosure	Required Disclosure	External Disclosure
Trust						
Coefficient *a*	.23*	-.39**	-.46***	-.50***	-.44***	-.59***
Coefficient *b*	.80***	.80***	.80***	.94***	.94***	. .94***
Point estimate and	.18	-.31	-.37	-.47	-.42	-.56
95% CI for indirect effect of IV on DV	(.08,.30)	(-.48,-.17)	(-.53,-.21)	(-.62,-.31)	(-.55,-.26)	(-.70,-.41)
Insinuation Anxiety						
Coefficient *a*	-.27*	.34**	.39**	.45***	.50***	.26*
Coefficient *b*	.08*	.09*	.09*	.08**	.08**	.08**
Point estimate and	-.02	.03	.03	.04	.04	.02
95% CI for indirect effect of IV on DV	(-.07,-.01)	(.01,.08)	(.01,.08)	(.01,.07)	(.01,.08)	(.003,.05)
Effect of IV on DV (take advice)						
Coefficient *c'* (controlling for mediators)	-.10	-.04	-.17	-.16	-.10	-.30***
Coefficient *c* (no mediators)	.06	-.32*	-.50***	-.59***	-.48**	-.84***
Point estimate and	.16	-.28	-.33	-.43	-.38	-.54
95% CI for indirect effect of IV on DV	(.04,.28)	(-.44,-.13)	(-.50,-.17)	(-.58,-.27)	(-.51,-.23)	(-.68,-.38)

Note. Each independent variable (IV) was a dummy variable for the indicated condition. Dummy variables for other conditions were included as covariates in each model. Non-standardized regression coefficients are shown (*a* refers to effect of IV on the mediator, *b* refers to the effect of the mediator on the DV [taking doctor's advice] when controlling for IV), as well as the point estimate and 95% confidence interval (CI) for the bias-corrected indirect effects of IV on DV through proposed mediators (*ab* paths).

*p <.05. ** p <.01. *** p <.001.

Table 3

Outcomes from Experiment 3

|	Non-Disclosure (ND)	Personal Disclosure (PD)	Required Disclosure (RD)	External Disclosure (ED)	Effect of Condition	PD vs. ND	PD vs. RD	PD & RD vs. ED	ED vs. ND
	Mean (standard deviation)				$F(3,781)$ statistic, p-value, η_p^2	$t(781)$ statistic, p-value			
Trust	3.91 (.75)	3.41 (.91)	3.47 (.80)	3.32 (.80)	$F = 20.74$ $p < .001$ $\eta_p^2 = .07$	$t = -6.05$ $p < .001$	n.s.	$t = 1.74$ $p = .08$	$t = -7.24$ $p < .001$
Insinuation Anxiety	2.28 (1.00)	2.73 (1.23)	2.78 (1.23)	2.54 (1.10)	$F = 7.98$ $p < .001$ $\eta_p^2 = .03$	$t = 3.94$ $p < .001$	n.s.	$t = 2.20$ $p = .03$	$t = 2.24$ $p = .03$
Panhandler Effect	3.10 (1.10)	2.70 (1.05)	2.87 (.99)	2.70 (1.09)	$F = 6.32$ $p < .001$ $\eta_p^2 = .02$	$t = -3.75$ $p < .001$	n.s.	n.s.	$t = -3.74$ $p < .001$
Take Doctor's Recommendation	3.73 (1.09)	3.14 (1.19)	3.25 (1.08)	2.89 (1.06)	$F = 20.24$ $p = < .001$ $\eta_p^2 = .07$	$t = -5.32$ $p < .001$	n.s.	$t = 3.19$ $p = .002$	$t = -7.56$ $p < .001$

Note. All responses were on a labeled 5-point Likert scale, strongly disagree/very unlikely (1) to strongly agree/very likely (5).

Table 4

Advisee decision on cash vs. lottery prize from Experiment 4 for men and women advisees

	No Advice (NA)	Non-disclosure (ND)	Non-COI disclosure (nonCOI-D)	COI Disclosure (COI-D)	All four Conditions	NonCOI-D vs. ND vs. NA	COI-D vs. NA	COI-D vs. ND	COI-D vs. nonCOI-D
	n (%)				Chi-square statistic, p-value				
Take Advisor's Recommendation (Lottery) (All)	5 / 61 (8.2%)	14 / 70 (20.0%)	10 / 60 (16.7%)	26 / 62 (41.9%)	X^2(3, N = 253) = 22.47 $p < .001$	X^2 (2, N = 191) = 3.68 $p = .16$	X^2 (1, N = 123) = 18.57 $p < .001$	X^2 (1, N = 132) = 7.49 $p = .006$	X^2 (1, N = 122) = 9.36 $p = .002$
Take Advisor's Recommendation (Lottery) (Women)	2 / 36 (5.6%)	6 / 41 (14.6%)	7 / 32 (21.9%)	18 / 38 (47.4%)	X^2(3, N = 147) = 20.90 $p < .001$	X^2 (2, N = 109) = 3.84 $p = .15$	X^2 (1, N = 74) = 16.39 $p < .001$	X^2 (1, N = 79) = 9.99 $p = .002$	X^2 (1, N = 70) = 4.92 $p = .03$
Take Advisor's Recommendation (Lottery) (Men)	3 / 25 (12.0%)	8 / 25 (32.0%)	3 / 26 (11.5%)	6 / 21 (28.6%)	X^2(3, N = 97) = 5.23 $p = .16$	X^2 (2, N = 76) = 4.57 $p = .10$	X^2 (1, N = 46) = 1.99 $p = .16$	X^2 (1, N = 46) = 0.63 $p = .80$	X^2 (1, N = 47) = 2.18 $p = .14$

Figure 1. Experiment 1: Mediation of Conflicting Forces
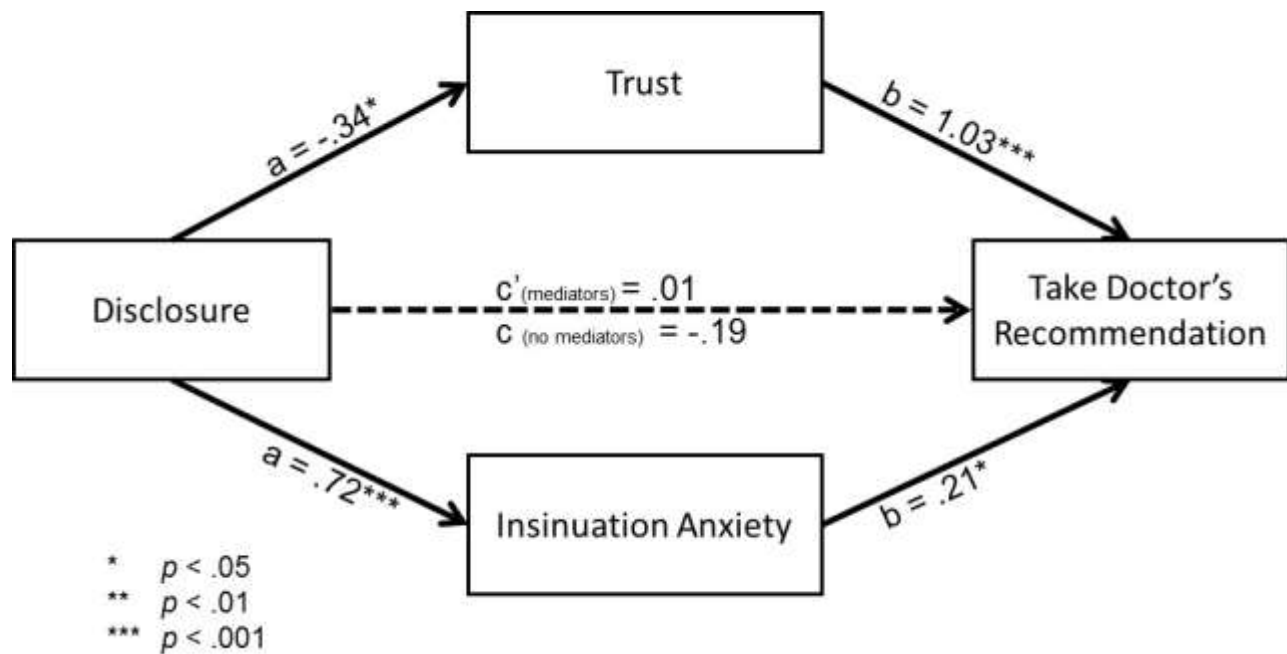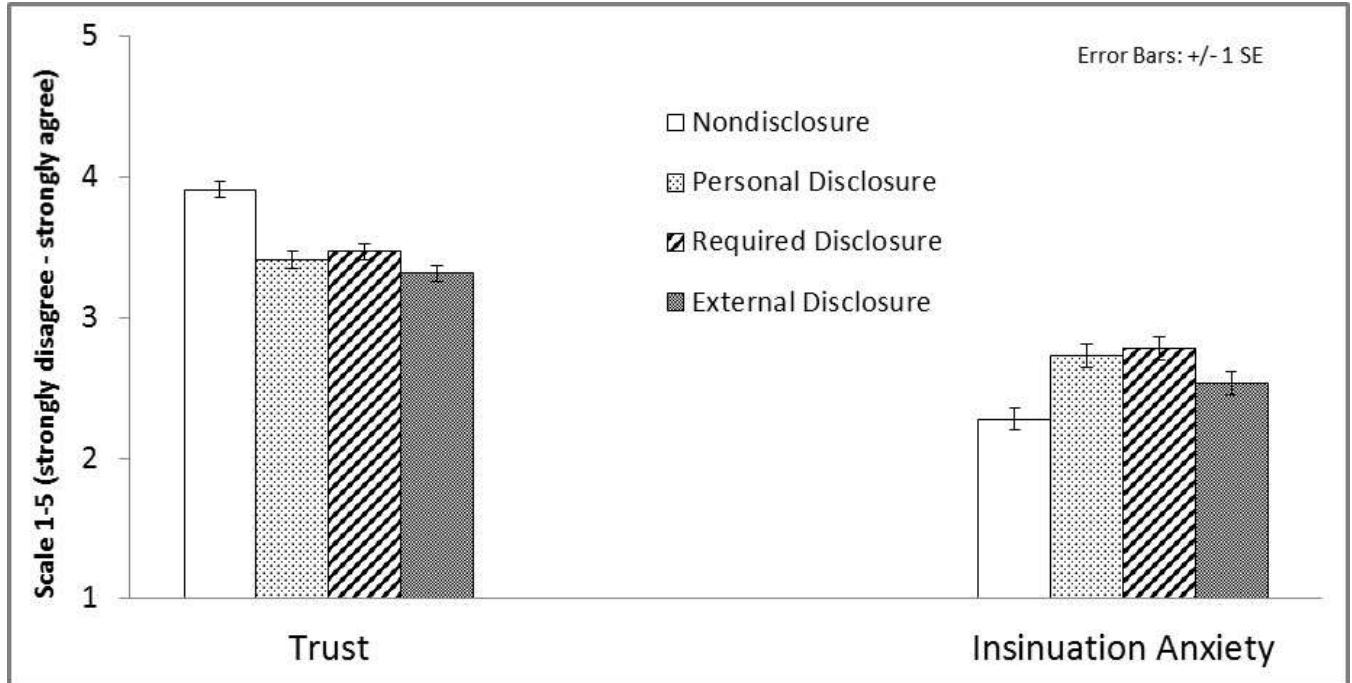

Disclosure creates decreased trust and increased insinuation anxiety. Although decreased trust will lead to patients being less likely to take the doctor's recommendation, increased insinuation anxiety created by disclosure increases the pressure to comply with the doctor's recommendation.

Note. Non-standardized regression coefficients are shown: *a* refers to effect of the independent variable (IV: disclosure) on each mediator (trust and insinuation anxiety), *b* refers to the effect of the mediator on the dependent variable (DV: taking the doctor's recommendation) when controlling for IV, *c* refers to the effect of the IV on the DV, and *c'* refers to the effect of the IV on the DV when controlling for the mediators.

Figure 2. Experiment 2: Disclosure of a Non-Financial Conflict of Interest
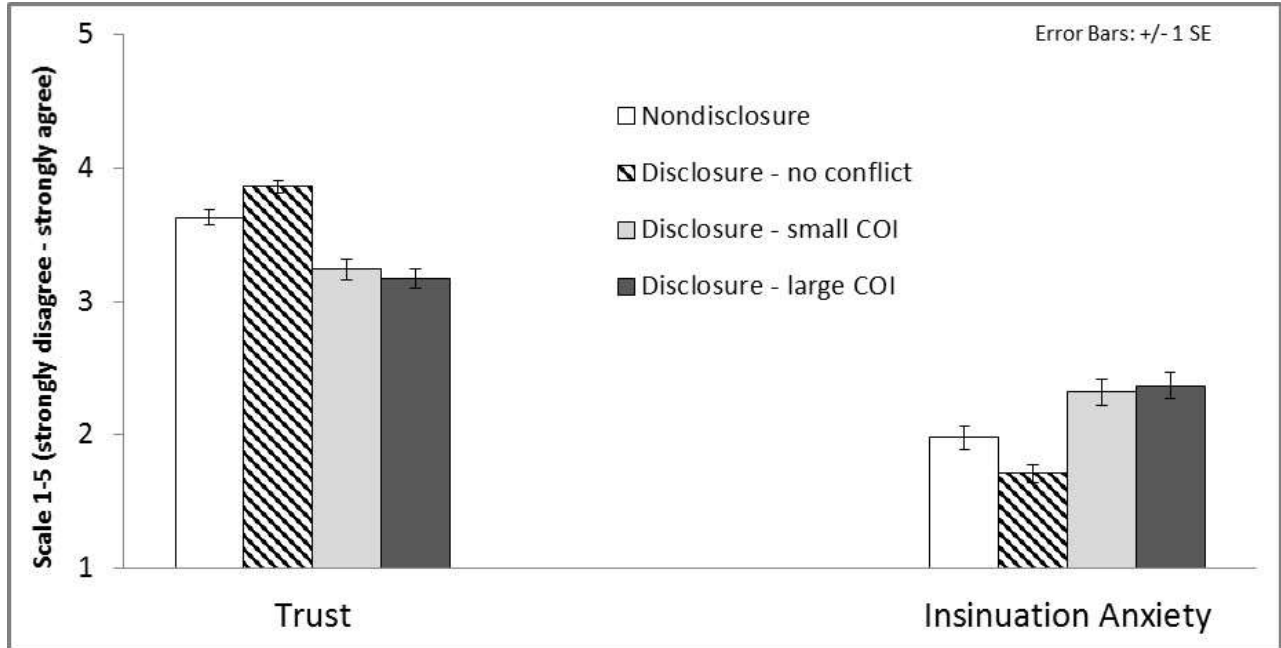
Disclosure of no conflict increases trust and decreases insinuation anxiety. Disclosure (of a small

or large COI) resulted in similar levels of decreased trust and increased insinuation anxiety.

Figure 3. Experiment 3: External Disclosure and Required Disclosure

Personal and required (mandatory) disclosure creates decreased trust and increased insinuation anxiety. External disclosure elicits decreased trust with only a smaller corresponding increase in insinuation anxiety.