Conflict of interest disclosure as an expertise cue: Differential effects due to automatic versus deliberative processing

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ABSTRACT

Disclosure—informing advice recipients of the potential bias of an advisor—is a popular tool to manage conflicts of interest. However, conflict of interest disclosures usually compete with a host of other information that is important, relevant or interesting to the advisee. Across one field study and five experiments, we examine the effect of conflict of interest disclosures in a realistic and context-rich setting (online blogs) in which the disclosure is short, clear and conspicuous (as desired by many regulatory bodies) but embedded in the context of other competing information. Our findings show that, in contrast to much of the prior research on conflict of interest disclosures, recipients who read a blog post containing a conflict of interest disclosure report increased trust in the blogger and evaluate the blogger, the blogger's recommendation, and the sponsoring organization more favorably than recipients who read a post with no disclosure. The effect is driven by disclosure acting as a heuristic cue to infer greater trust in the blogger's expertise and consequently greater persuasion. The inference of greater expertise and its effect on persuasion are mitigated when recipients deliberate on the disclosure. We discuss implications of these findings for organizations, advisors, consumers and policy makers.

1. Introduction

Advisors, experts and opinion leaders across a range of professions often face a conflict of interest (COI), that is, a potential clash between their professional responsibilities (i.e., providing good quality, unbiased advice to others) and self-interests (e.g., financial gain). For instance, physicians may receive incentives or gifts from pharmaceutical companies (Sah & Fugh-Berman, 2013; Sah & Loewenstein, 2010), financial advisors may receive greater commissions if their clients buy certain products (Boatright, 2000), and bloggers may receive money or other material gifts from companies for reviewing a product or service. These and other similar situations create a COI because the advisor (e.g., physician, financial advisor, blogger, etc.) has an incentive to provide recommendations that benefit them, whether or not the recommendations are best for the advisee. Thus, COIs create the possibility of biased advice.

A common approach to managing such conflicts is disclosure (Sah, 2017); that is, informing the advisee of the possible COI of the advisor. Along these lines, the U.S. Securities and Exchange Commission (SEC) requires registered investment advisors to disclose when they receive a commission for referring clients to solicitors or brokers (2010). Similarly, the U.S. Federal Trade Commission (FTC) requires that bloggers

in social media explicitly disclose to their online readers any COIs, including incentives or payments to recommend a product or service (2013). The rationale is that disclosure will alert recipients to the COI, so they can accurately adjust for any potential bias. Disclosure decreases the information gap between an advisor and the advisee, and, at least in theory, leads the advisee to make a more informed decision (Crawford & Sobel, 1982).

Considering the emphasis on disclosures as the preferred method for managing COIs, a question that naturally arises is whether disclosures are effective and prompt judgment correction. Extant research has revealed mixed results about the effects of COI disclosures on advisors and advisees. Among advisors, COI disclosure can lead to both increased or decreased bias in advice relative to advisors who do not disclose (Sah, 2018). When advisors increased the bias in their advice with disclosure, advisees were often worse off because, although they discounted the advice that came with a COI disclosure, they did not discount enough to overcome the increased bias (Cain, Loewenstein, & Moore, 2011), perhaps due to anchoring effects (Tversky & Kahneman, 1974). Importantly, these studies focused primarily on the advisors and did not examine advisees' perceptions of their advisors. In particular, trust in the advisors was not examined. When trust in advisors was recorded, as expected, COI disclosure led advisees to reduce trust in

advisors (Hwong, Sah, & Lehmann, 2017; Sah & Feiler, 2018), although in some situations disclosure simultaneously increased social pressures on advisees to comply with the advisor's recommendation (Sah, Loewenstein, & Cain, 2013, 2018). However, recent research examining the effect of disclosure in information-rich environments suggests that disclosures may increase trust and compliance (Abendroth & Heyman, 2013; Sah, Fagerlin, & Ubel, 2016).

In this paper, we focus on how recipients process COI disclosures from their advisors in a realistic and context-rich environment and examine the effect of a moderating variable, automatic versus deliberative processing of the COI disclosure. Specifically, we show that COI disclosure can *enhance* evaluations of advisors and their persuasiveness when COI disclosures are processed automatically. This effect occurs because COI disclosure acts as a heuristic cue to infer greater trust in the advisors' expertise, an effect we call "*disclosure's expertise cue.*" We find that this effect is mitigated and sometimes reversed when recipients deliberate on the COI disclosure. This moderating effect of automatic vs. deliberative processing may help to reconcile earlier research showing disparate outcomes of COI disclosure.

Next, we review the literature on COI disclosures and outline our research hypotheses. We then present empirical evidence from one correlational field study and five experiments that manipulated the presence versus the absence of COI disclosures. We conclude by discussing implications of our findings for organizations, advisors, consumers and policy makers.

2. The effectiveness of conflict of interest disclosures

In principle, COI disclosures reduce the information gap between the advisor (i.e., the message source) and the advisee (i.e., the message recipient), and should serve as a warning to recipients alerting them of a potential bias in the recommendations or opinions of the advisor. This warning should set in motion a deliberate judgment correction process, which would lead to less favorable judgments of the advice and of the advisor (Martin, Seta, & Crelia, 1990; Meyers-Levy & Malaviya, 1999). Research on advice-taking, source credibility, and persuasion knowledge also proposes that claims made by agents who are perceived to be potentially biased will be discounted (Campbell & Kirmani, 2000; Friestad & Wright, 1994; Kelley, 1973; Van Swol, 2009). The disclosure literature primarily provides support for this effect; COI disclosure has generally been shown to reduce trust in the advisor (Hwong et al., 2017; Kesselheim et al., 2012; Sah & Feiler, 2018; Sah & Loewenstein, 2014; Sah et al., 2013, 2018).

Even though COI disclosures have been shown to decrease trust in the advisor, they do not always result in decreased compliance with the advice. In fact, previous research has shown that even in contexts where disclosures lead to lower trust in the advisor, advisees may show greater compliance because of social pressure (i.e., they do not want to appear distrustful of the advisor, particularly when their responses are visible to the advisor) and because of their desire to help the advisor (Sah et al., 2013, 2018). Importantly, advisees reported decreased trust in advisors who disclosed a COI, even when compliance was sometimes increased.

Decreased trust in the advisor because of COI disclosure is perhaps the intent of FTC and SEC regulations that require such disclosures: it may be reasonable for advisees to correct their judgments due to the disclosure bringing attention to uncertainty in the advice quality. However, decreased trust may be an overcorrection at times. For instance, Sah and Feiler (2018) documented a "*disclosure penalty*" effect, which refers to recipients' decreased trust in their advisors for merely possessing a COI. This penalty exists even when the advice is of good quality and recipients have full information to assess the advice quality, and even when advisors sacrifice their self-interest to give good quality advice. The disclosure penalty can thus lead to valuable advice being ignored if the correction process "over-shoots."

In contrast, it is possible that recipients may ignore or overlook

disclosures (Ben-Shahar & Schneider, 2011; Rose et al., 2018). This may occur because judgment correction requires adequate levels of cognitive resources to encode and facilitate elaboration of the COI disclosure and the integration of its implications into judgments (Campbell & Kirmani, 2000; Johar & Simmons, 2000). Recipients may fail to incorporate the implications of the disclosure in the absence of adequate motivation, ability, and opportunity to process the disclosure.

Because deliberation on the disclosure and consequently judgment correction may be the intended purpose of implementing COI disclosures, if advisees do not incorporate the implications of the disclosure in their processing, the disclosure may be perceived to have "failed," at least from the regulator's standpoint. From this perspective, COI disclosures function as a warning. Prior research has demonstrated that for warnings to be effective, recipients must see or hear the warning, understand its meaning, and use the inference to make informed decisions (see Mayhorn & Wogalter, 2010 for the communication-human information processing model). Specifically, for successful delivery of a warning, recipients must pay adequate attention to the stimuli, which requires, first, switching attention from a primary activity to the warning, and second, maintaining attention on the warning to internalize it before comprehending its meaning (Cowley & Wogalter, 2011; Laughery & Wogalter, 2006; Mayhorn & Wogalter, 2010). Many variables may block or interfere with this path, such as competing information which causes cognitive overload and distraction, as well as the length and number of disclosures which may overwhelm recipients who could lose the motivation to process the information (Ben-Shahar & Schneider, 2011). In order to make disclosures more effective, the FTC issued guidelines for online disclosures that advocate the four "P's" of disclosure: prominence, presentation, placement and proximity, as well as the need for clear and conspicuous disclosures to be just-in-time (Federal Trade Commission, 2013).

3. Increased source credibility and persuasiveness with conflict of interest disclosure

In the preceding section, we highlighted two outcomes for recipients' perceptions of their advisors' trustworthiness when processing a COI disclosure: (1) reduced trust, due to a judgment correction process (Hwong et al., 2017; Kesselheim et al., 2012; Sah & Feiler, 2018; Sah & Loewenstein, 2014; Sah et al., 2013, 2018); or (2) no effect on trust, presumably due to insufficient available resources for processing the disclosure (Ben-Shahar & Schneider, 2011).

A third outcome is also possible—increased trust in the advisor. In this paper, we attempt to reconcile this outcome (increased trust) with the other two possible outcomes (decreased trust or no effect on trust) from COI disclosure. Specifically, we hypothesize that COI disclosures could have a *favorable* effect on recipients' perceptions of the advisor (source credibility) and the advisor's persuasiveness when the disclosure is processed automatically. Evidence supporting this effect comes from two different domains: word-of-mouth marketing and medical decision making.

In the word-of-mouth marketing domain, several papers report that disclosure of a COI had a positive effect on trust or the persuasiveness of the agent (Abendroth & Heyman, 2013; Abendroth, 2012; Carl, 2008; Tuk, Verlegh, Smidts, & Wigboldus, 2009). In a correlational study, Carl (2008) reports evidence from surveys with word-of-mouth agents (e.g., brand ambassadors) and their conversational partners. The results suggest that agents who explicitly disclose partnerships with brands during the word-of-month conversation (compared to discovery of the partnership after the word-of-mouth event) are trusted more. Specifically, perceptions of the agent's trustworthiness (integrity) and goodwill towards the partner (benevolence) increased with the presence of disclosure, although there were no differences with regards to the agent's expertise. Moreover, disclosure was not associated with persuasion variables such as intent to use or purchase behaviors, though it was associated with the likelihood that partners would pass on the

information to others. However, due to the correlational nature of the study, we cannot infer that disclosure during the event caused the increased trust and information-sharing. Importantly, agents were more likely to disclose during the event if the partner was a strong tie (spouse, friend, or relative) rather than a weak tie (stranger, co-worker or acquaintance), and the effect of tie was stronger than (and confounded with) the effect of disclosure on trust.

Similarly, using causal experimental methodology, Tuk et al. (2009) found that consumers who received a recommendation with disclosure of a financial benefit, purportedly from a fellow student, rated the agent as more sincere than consumers who discovered the financial benefit after the word-of-mouth event. There was no effect of disclosure on purchase intentions.

More recent studies have found that word-of-mouth COI disclosure compared to no disclosure (i.e., the COI is never discovered) led to increased persuasion (Abendroth & Heyman, 2013; Abendroth, 2012). For instance, Abendroth and Heyman (2013) reported that when a word-of-mouth agent disclosed that their communication was sponsored by a brand, compared to no disclosure, consumers' purchase intentions and positive attitudes towards the product increased. Interestingly, these authors also reported that when the COI was revealed after the word-of-mouth episode had ended, rather than occurring during the word-of-mouth conversation itself (as in Carl (2008) and Tuk et al. (2009)), the positive evaluations from disclosure were eliminated.

In the medical decision-making domain, Sah et al. (2016) documented an effect of increased trust in the advisor's expertise due to disclosure of bias. Sah et al. (2016) examined the disclosure of "specialty bias" rather than an explicit COI disclosure. Specialty bias refers to the bias in physicians who recommend the treatment that they are trained to deliver even when other effective treatment options are available. In one experiment, participants were randomized to disclosure and nondisclosure conditions and watched a video of a male actor playing the role of a surgeon who described two treatment options—surgery and radiation—and recommended surgery. Participants in the disclosure condition, who heard their surgeon disclose that he was biased towards recommending surgery because he is a surgeon, were significantly more likely to choose surgery and report increased trust in the surgeon's expertise than participants in the nondisclosure condition. Thus, the disclosure appeared to provide an expertise cue rather than a warning. In a related vein, an expertise cue may account for the finding that COI disclosures in medical journals are associated with higher citation rates (Kulkarni, Busse, & Shams, 2007; Okike et al., 2011).

4. Automatic versus deliberative processing of conflict of interest disclosures

Why did disclosure lead to greater persuasion in some of the word-of-mouth studies and in the medical domain compared to other prior research which revealed decreased trust with disclosure? In many of the prior studies that examined COI disclosures, recipients had to make simple decisions in the presence or absence of COI disclosure, for example, deciding between one of two lotteries (Sah & Feiler, 2018; Sah et al., 2013). There was little competing information before the decision had to be made, making any disclosure highly salient.

In contrast, in the word-of-mouth studies (Abendroth & Heyman, 2013; Abendroth, 2012; Carl, 2008; Tuk et al., 2009) and the specialty bias study (Sah et al., 2016), there was notably more interaction or competing information given to participants. Most of the word-of-mouth studies did not focus on perceptions of the advisor's expertise but on other dimensions of source credibility such as integrity, benevolence, or sincerity. However, in the medical specialty bias study, the researchers found that perceptions of expertise mediated the effect of a bias disclosure on persuasion. In this study, participants had information about different treatment options, context-rich stimuli (e.g., videos), and the participants, men of a demographic age who may be

concerned about the medical condition being discussed (localized prostate cancer), were likely motivated to learn more about the medical condition (Sah et al., 2016). In other words, recipients may have focused more on the information regarding the medical decision they had to make, rather than on drawing implications about advice quality from the disclosure of bias. Recipients may not have had the necessary cognitive resources available to engage in judgment correction or discounting of the surgeon's recommendation. However, rather than just ignoring the disclosure, participants may have processed the specialty bias disclosure automatically, without much conscious awareness, using it as a heuristic cue to infer greater expertise of the physician. Perceptions of greater expertise, in turn, would result in more favorable judgments of the advisor and increased persuasion.

A body of research summarized by Ferguson and Zayas (2009) describes how people can evaluate a stimulus even when they are not conscious of the stimulus and thus are unaware of having evaluated it. These evaluations can be rapid and unintentional, and can occur even when people are engaged in another task. Furthermore, even when conscious of a stimulus, people may evaluate it without intending to do so. Ferguson and Zayas (2009) highlight how this automatic evaluation may be at odds with how people evaluate the same stimuli given more deliberation. This automatic process may raise unintentional associations that would not occur with deliberative processing.

5. Conflict of interest disclosure as an expertise cue

Given the body of research on automatic processing, one explanation for enhanced trust in the physician's expertise with specialty bias disclosure is that recipients processed the bias disclosure automatically because their cognitive abilities were likely burdened with information about the medical condition and treatment options. Thus, instead of deliberating on the implications of the disclosure, recipients may have simply used it as a signal that the physician was competent. To the extent that individuals process disclosures of specialty bias and disclosures of COIs similarly, automatic processing of COI disclosures may also raise associations of expertise in a way that would not occur with deliberative processing.

Previous research on persuasion has documented that people frequently use contextual cues to automatically evaluate source expertise, particularly in situations in which expertise is difficult to assess objectively (Cialdini, 2006). As Cialdini (2006) shows, lab coats and a variety of other official looking clothing and titles are sufficient to signal that a person has expertise in the domain under consideration. However, these signals influence perceptions of expertise only when people are not allocating adequate cognitive resources and are engaging in automatic processing, what Cialdini (2006) calls the "click, whirr mode" of thinking.

Interestingly, recent research on consumers' evaluations of service providers shows that expertise—traits related to the effective provision of a service, such as knowledge, skill, and intelligence—dominates other evaluative dimensions, such as the service provider's morality and warmth (Kirmani, Hamilton, Thompson, & Lantzy, 2017). This primacy of expertise occurs across several categories of service providers, such as doctors, personal trainers, career coaches, auto mechanics, and hair stylists, most likely because a service provider's expertise helps consumers achieve their task-related goals.

We propose that COI disclosures will lead to increased trust in the advisor's expertise when recipients (i.e., advisees) engage in automatic processing (System 1) and use the disclosure as a heuristic cue to evaluate the advisor (i.e., the message source), which subsequently influences the persuasiveness of the advisor (see Kahneman, 2011 for more information on System 1 versus System 2 processing). If greater resources are allocated to the COI disclosure and recipients engage in more deliberate (System 2) processing, we predict that a judgment correction process will be triggered: recipients will perceive potential advisor bias and will attempt to correct for any perceived undue

influence on their judgment, resulting in less trust and less favorable judgments regarding the advisor (Sah & Feiler, 2018) and subsequently will be less persuaded by the advisor's message.

6. The present research

To examine the effects of automatic versus deliberate processing of disclosures, we used the setting of online blogs. Online blogging is a relevant and compelling context to study for several reasons. First, the blogging context is rife with COIs. As social media attracts increasingly larger audiences, organizations are turning to bloggers to communicate information to consumers (Wolverson, 2013), primarily because bloggers are perceived by readers to be a source of unbiased, independent information that is often deemed more credible than information provided directly by an organization. However, incentives create the potential for biased content. Organizations and marketing strategists frequently forge formal or informal financial arrangements with bloggers. While the specific nature of these relationships varies, bloggers with many followers frequently partner with firms and are either financially compensated for providing their views on specific products and eliciting particular responses from consumers (e.g., click-throughs), or receive free products and services from companies with a request to offer their opinion about these offerings. Even if there is no explicit expectation that the reviews provided will be of a certain quality or valence, an implicit quid-pro-quo might emerge over time. Bloggers who receive payments or free products for writing reviews or recommendations face a potential COI because the financial compensation or gifts could sway their opinion, whether consciously or unconsciously (Moore, Tanlu, & Bazerman, 2010).

Second, online blogging is a setting in which COI disclosures are now mandated. Regulators such as the FTC require that bloggers disclose any COIs, by stating whether they have received an incentive or payment from the company whose product or service they are reviewing or recommending (Federal Trade Commission, 2013). In addition, the Word of Mouth Marketing Association recommends the need to disclose any type of material compensation, including free products or services, loaner products, in-kind gifts, and special access privileges in exchange for blogging about the product or service that a business provides (Morris, 2010). Yet, despite these mandates and recommendations, bloggers and other online marketing agents are reputed to shirk their responsibility to disclose a COI (CBS News, 2017).

Third, the blogging context offers a realistic information-rich setting in which COI disclosures are likely to be processed less deliberately due to competing information from the blog itself. Finally, online blogs allow us to explore COI disclosures in the field as well as in controlled experiments to examine causal relationships between disclosure and recipients' responses.

7. Research hypotheses

We propose that when COI disclosures are processed in an automatic manner, they can provide a heuristic cue regarding the blogger's expertise, which in turn increases the blogger's persuasiveness. Only when recipients deliberate on the COI disclosure will they infer a bias and engage in a judgment correction process. The outcome of this judgment correction process is an erosion of trust in the blogger's expertise leading to reduced credibility and persuasion.

In our studies, we measure both "source credibility," that is, the message recipient's perceptions of the blogger (such as trust in the blogger, positive evaluations of the blogger, and perceptions of bias in the blogger), and changes in the message recipients' attitudes or behavior related to the *content* of the message (such as intent or willingness to share the blog post with others, intent to follow the blogger or take the blogger's advice, and evaluations of the endorsed brand, company, or product). We refer to these latter measures of changes in

attitudes or behavior as measures of the blogger's "persuasiveness." Drawing from Petty and Cacioppo's Elaboration Likelihood Model (1986), we posit that source credibility is a mediator explaining the relationship between disclosure and the blogger's persuasiveness.

Perceptions of the blogger's trustworthiness is one of our measures of source credibility. Trust is defined as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor" (Mayer, Davis, & Schoorman, 1995, p. 712). We use Mayer et al.'s (1995) tri-dimensional model of trustworthiness composed of benevolence (i.e., the extent to which a trustee is believed to want to do good to the trustor), integrity (i.e., belief that the trustee has a strong sense of justice and that the party's actions are congruent with his or her words), and *expertise or ability* (i.e., "skills, competencies, and characteristics that enable a party to have influence within some specific domain" (Mayer et al., 1995, p. 717). Like others (Colquitt, Scott, & LePine, 2007; Mayer et al., 1995), we use the constructs *expertise* and *ability* as synonyms. Although COI disclosures may provide a positive heuristic cue for all three dimensions of trust, given the primacy of expertise over benevolence and integrity in evaluations of service providers (Kirmani et al., 2017), we expect that the effect of COI disclosures on persuasion will be driven by perceptions of the blogger's expertise.

Overall, we expect that the default mode of processing of COI disclosure in context-rich environments such as online blogging will be automatic. In this case, we predict that disclosures of sponsorship by an organization provides a signal that the blogger was chosen because she is a respected and established opinion leader in her domain and has valuable information to share with others. In other words, we predict that statements communicating that a certain company is sponsoring the blogger provides an endorsement of the achievements or expertise of the blogger. An increase in perceived expertise should lead to more favorable evaluations of the blogger, which in turn, would lead to greater persuasion by the blogger.

In contrast, when recipients are prompted to deliberate on the COI disclosure, we predict that COI disclosure will increase perceptions of bias in the blogger. These perceptions of bias should trigger a judgment correction process in which recipients lower their perceived trust in the blogger and adjust their evaluations of the blogger downwards, leading to reduced persuasion. Although all three dimensions of trust are likely to be impacted by this judgment correction, we expect that the effect on persuasion will be driven by inferences of the blogger's expertise. More formally:

Hypothesis 1. Compared to the absence of disclosure, the presence of COI disclosure will lead to greater source credibility (trust in, and positive evaluations of, the blogger) and subsequently greater blogger persuasiveness when the disclosure is processed automatically.

Hypothesis 2. Deliberating on the COI disclosure will increase perceptions of bias in the blogger which in turn will reduce other measures of source credibility (trust in, and positive evaluations of, the blogger) and subsequently persuasiveness relative to: (a) the absence of disclosure, and (b) when the disclosure is processed automatically.

Hypothesis 3. The effect of COI disclosure on persuasiveness will be mediated by source credibility, specifically by the recipients' trust in the blogger's expertise and positive evaluations of the blogger.

Fig. 1 outlines our conceptual model. Next, we report one field study and five experiments that sampled from a variety of populations. We evaluated source credibility by measuring positive evaluations of the blogger, perceptions of the blogger's trustworthiness along the dimensions of expertise, integrity and benevolence, and perceptions of bias in the blogger. We used a variety of measures to assess blogger persuasiveness including sentiment of consumers' comments in response to a blog post (in our correlational field study), recipients' intent or
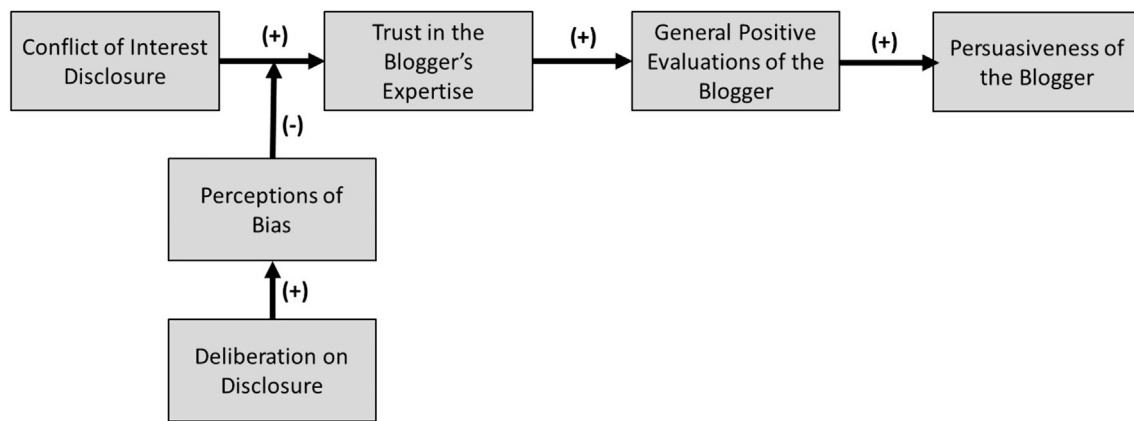
Fig. 1. Conceptual model.

willingness to share the blog post with others, evaluations of the brand or company recommended by the blogger, likelihood of taking the blogger's advice, and intent to follow the blogger.

8. Study 1: Conflict of interest disclosures in blogs are correlated with positive comments

For our first study, we collected field data to examine whether COI disclosures in blogs influence the readers' responses in a naturalistic environment across a variety of blogs. The objective was to explore the influence of blog posts that contain (vs. not contain) COI disclosures on readers' sentiment as measured by the valence of consumer comments at the end of the post. In these naturalistic settings, where readers are not prompted to deliberate on COI disclosures, we predicted that the presence of COI disclosures would be associated with more positive comments (providing support for Hypothesis 1).

8.1. Methods

We focused on fashion and beauty bloggers because industry analysts report that established bloggers in this domain are frequently approached by companies to promote their products (Wolverson, 2013). We used the 2015 ranking of the 99 most influential fashion and beauty blogs worldwide published by Signature9, an online magazine that covers fashion, beauty and lifestyle news (see http://www.signature9.com). Signature9 creates their ranking by first identifying over 500 fashion and beauty blogs from around the word, some from knowledge among the editorial team, others from extensive online searches. After eliminating blogs that are infrequently updated, Signature9 assigns a score that captures assessments of the blogs' content and popularity. The higher the score, the higher the ranking of the blog.

Out of the 99 ranked blogs, there were 60 unique blogs based in the United States. To avoid cultural differences in displays of readers' sentiment and to focus on English-written blogs, we limited our sample to these 60 blogs (listed in the supplement). For each of the 60 blogs, we recorded all the blogging activity that had occurred during a two-year period: from October 1, 2013 to September 30, 2015. There were 154,838 unique posts within this 2-year window. The total number of posts for each blog ranged from 90 to 14,129 posts ($M = 7,206$, $SD = 4,138$). Average (mean) post length was 219 words ($SD = 302$). Eleven blogs contained no consumer comments and were therefore excluded from the sentiment analysis.

The data extraction, coding and consumer sentiment analysis was performed by a data analytics firm (http://www.innovaccer.com/). This firm specializes in online textual and consumer sentiment analysis. To capture the presence of a COI disclosure, the data analytics firm conducted a textual analysis of the content of each post (see the supplement for more information on the textual analysis). The key

dependent variable was the mean sentiment of consumers' comments for each blog post. Using their proprietary algorithm, each consumer comment to every blog post was assigned a sentiment score varying from -1 (negative sentiment) to $+1$ (positive sentiment) reflecting the average valence of the words present in any given comment. Table 1 lists the main variables that were recorded for each blog.

8.1.1. Statistical analysis

Due to an extremely low incidence of disclosures in our sample (only 346 out of 154,838 posts contained COI disclosures) and low within-blog variance in terms of the presence of disclosure, a post-level analysis of the presence of disclosure on consumer sentiment was not appropriate. For instance, only 23 blogs (out of 49 blogs for which there were consumer comments) had at least one disclosure, and only 5 blogs had 10 or more disclosures. There was some variation across blogs in their rate of disclosure (i.e., the proportion of posts for a given blogger that contained disclosure, which varied from 0% to 7%), thus, we conducted a regression analysis on group (blog) means, using differences in the rate of disclosure across blogs as a predictor variable. This model averages the variables at the blog level, and allows us to use the whole sample of blogs, including the blogs that did not contain any disclosure. The mean sentiment of consumers' comments for each blog served as the dependent variable.

We ran two model specifications to assess the robustness of the relationship between rate of disclosure and consumer sentiment after controlling for several characteristics of the blog. In the first model, we regressed the average sentiment of consumers' comments for each blog on the blogger's rate of COI disclosure. In the second model, we added four control variables: average post length, average number of consumer comments per post, total number of posts by the blogger, and blog rank. Both models also included covariates to account for the post date (month and year of the post).

8.2. Results

8.2.1. Presence and location of conflict of interest disclosures

Fifty three percent of the blogs in the full sample ($n = 32/60$) contained at least one post with COI disclosure. The incidence of disclosure was very low: 346 of 154,838 posts contained some form of COI disclosure (0.2% of all posts). This was surprising given that the sample is composed of established bloggers who are likely to be frequently approached by fashion and beauty brands to write sponsored posts. When the posts did contain a COI disclosure, in most cases the disclosures appeared at the bottom of the post (63%, 217/346), followed by 27% (95/346) at the top of the post, and 10% (34/346) embedded in the text.

Table 1
Main variables recorded in Study 1 for all 60 blogs.

Level	Variable	Values	Descriptives
Blog	Blog rank	Continuous	Range: 1–98
Blog	Rate of disclosure (proportion of posts within a blog that contain disclosure)	Continuous	Range: 0–7%
Blog	Total number of posts per blog	Continuous	Range: 90 to 14,129 Mean: 7206 SD: 4138
Post	Presence of COI disclosure (captured via textual analysis)	Dummy	0, 1 Disclosure absent (n = 154,492) Disclosure present (n = 346)
Post	Disclosure location	Categorical	Top of the post (n = 95) Bottom of the post (n = 217) Embedded in text (n = 34)
Post	Post length (number of words)	Continuous	Range: 0–10,803 Mean: 219 SD: 302
Post	Number of comments	Continuous	Range: 0–7928 Mean: 15 SD: 58
Consumer comment	Consumer sentiment	Continuous	Range: −1 to +1 Mean: 0.21 SD: 0.22

8.2.2. Consumers' sentiment

The mean sentiment score was 0.21, $SD = 0.22$, revealing the positive sentiment of most of the comments.

8.2.3. Correlations

The correlations of the main variables are shown in the supplement (Table S1). The presence of a COI disclosure was positively correlated with the average sentiment of consumers' comments ($r = 0.04$, $p < .01$) and with the length of the post ($r = 0.02$, $p < .01$). Moreover, the presence of disclosure was also positively correlated ($r = 0.03$, $p < .01$) with blog rank (measured from 1st to 99th), suggesting that disclosures were more frequent in lower ranked blogs as opposed to higher ranked blogs. The presence of disclosure was negatively correlated with the total number of posts in a blog ($r = −0.04$, $p < .01$), suggesting that they were more common in blogs with fewer posts during the 2-year period. Also, the presence of disclosure was negatively correlated with the number of consumer comments for each post ($r = −0.005$, $p < .05$).

8.2.4. Regression analysis

Table 2 presents the regression coefficients for each of the regression models. Our first regression model revealed a positive association of the blogger's rate of disclosure with the sentiment of consumers' comments, $B = 3.23$, 95% CI [0.37, 6.09], $p = .03$ (Table 2, Model 1). Attesting to the robustness of this effect, we found that adding covariates for average post length, average number of comments, total number of posts and blog rank did not alter the positive significant association between the blogger's rate of disclosure and the sentiment of consumers' comments, $B = 3.12$, 95% CI [0.13, 6.10], $p = .04$ (Table 2, Model 2). Thus, consistent with the pattern predicted by Hypothesis 1, we find a positive association between a blogger's rate of disclosure and the average sentiment of consumers' responses.

8.3. Discussion

In summary, we found that the incidence of COI post disclosures in our sample of fashion blogs was extremely low (0.2%). If COIs were disclosed on the post page, the majority appeared at the end of the post (63%). We also found that the higher the rate of COI disclosures in a blog during the 2-year period, the more positive the sentiment of consumers' comments. Although we could not identify the content of consumers' comments (i.e., whether it was about the blogger or the

Table 2
The effect of blogger's rate of disclosure on consumer sentiment in Study 1.

Predictor	Coefficient for consumer sentiment 95% Confidence Interval [lower bound, upper bound]	
	Model 1	Model 2
Rate of COI disclosure	3.2284[*] [0.3658, 6.0911]	3.1148[*] [0.1320, 6.0976]
Post length		−0.0004[**] [−0.0006, −0.0001]
Number of comments		< 0.0001 [−0.0008, 0.0010]
Total number of posts		−0.00002[**] [−0.00003, < −0.0001]
Blog rank		0.0005 [−0.0020, 0.010]
Constant	−4.5838[*]	2.3319
Number of observations (groups)	74,748 (49)	74,745 (49)
R^2	0.51	0.70

Note: 11 (out of 60) blogs had no consumer comments and were excluded from this analysis.
* $p < .05$.
** $p < .01$.

product being recommended), this finding is consistent with our proposed theorizing that COI disclosures serve as a positive evaluative cue to consumers and provides supportive evidence that readers may not spontaneously deliberate on the meaning of COI disclosures when reading blogs (Hypothesis 1).

The limitations of this field study are its correlational nature and the potential for omitted variable bias. Readers naturally self-select the blogs they read. As such, readers who are negatively affected by COI disclosures may choose to stop reading a blog as the rate of disclosure increases, thus leaving only readers who are more positive towards the blogger. Our following experimental studies, in contrast, do not suffer from these endogeneity issues.

9. Study 2: Conflict of interest disclosures increase persuasiveness

In Study 2, we examined whether the presence of a COI disclosure from a blogger enhances the blogger's persuasiveness (Hypothesis 1). Both the FTC and the Word of Mouth Marketing Association

recommend that the disclosure should be in plain language, appear in a clear and conspicuous manner and be included on the same page as the target message (Federal Trade Commission, 2013; Morris, 2010). There are no specific guidelines about where the disclosure should appear in the post. Thus, we tested two locations for the disclosure (beginning versus the end of the post).

In much of the prior research on COI disclosures from advisors, disclosure statements were given at the same time as the recommendation. Research on the psychology of belief suggests that it is better to disclose that the blogger might be conflicted *before* the recipient reads the blog rather than afterward, because it is easier to compensate for possible bias by reading a blog with skepticism than reading the blog first and *then* being warned about potential bias (Tversky & Kahneman, 1974). Disclosures at the end of the blog require recipients to overcome an anchor since they have already formulated an opinion regarding the product recommendation and then adjust for the warning. As we documented in Study 1, most bloggers who disclose, do so at the end rather than the beginning of the post.

Furthermore, disclosures at the beginning of a blog may be more likely to be read and processed deliberatively. Thus, location of the disclosure statement (beginning vs. end of the post) may serve as a subtle manipulation of deliberation and it is possible that our predicted positive effect of disclosure on persuasion is mitigated when the disclosure appears at the beginning of the post.

9.1. Methods

9.1.1. Participants and design
We targeted participants between the age of 18 and 24 from Mturk to take part in this study. This age group was chosen due to the nature of the blog post, which is relevant to young adults. One hundred forty-two participants[1] (45 women, 97 men; $M_{age} = 21.7$, $SD = 1.9$) were randomized into one of three conditions: nondisclosure, COI disclosure at the beginning of the post and COI disclosure at the end of the post.[2]

9.1.2. Procedure
Participants were presented with a real blog written by a female college graduate living in New York City who writes about fashion, urban lifestyle, and home decorating (http://www.thecollegeprepster. com). To introduce participants to the style and tone of the blog, participants initially read the page that contained the blogger's short bio and were presented with an example post by the blogger that was not sponsored by any company and did not present any product recommendations. Next, participants were presented with the target post, in which the blogger makes suggestions about how to make a small apartment look bigger. In the target post, titled "Apartment Guide: How to Make a Small Space Seem Big," the blogger provides several recommendations about home décor that come from Apartment Guide, an online portal with information for consumers seeking to rent an apartment. At the beginning of the post, the blogger mentions Apartment Guide and speaks in a positive tone about it. She also includes the link to the Apartment Guide home page in her post.

At the end of the post, the blogger discloses that she had recently partnered with Apartment Guide. We removed the original disclosure statement for the nondisclosure condition in this study. In the disclosure conditions, the disclosure statement was edited and extended to clarify the meaning of sponsorship. The disclosure read "This posting is sponsored by Apartment Guide, which means I was paid to review their website in my blog." This disclosure statement was inserted either at the beginning of the post just below the title of the post, or at the end of

the post, just below the last sentence. The disclosure was in bold italics with slightly larger font than the rest of the post.

After viewing the blog, we measured the blogger's persuasiveness with two items. First, we asked readers whether they would share the blog posting with anyone else, for example a friend or relative (binary measure, yes/no). Second, we measured interest towards the company mentioned by the blogger by asking participants to rate the likelihood from 1 (very unlikely) to 7 (very likely) that they would click on the Apartment Guide link provided in the post. In the two disclosure conditions, we also asked participants (yes/no) if they recalled the disclosure statement. Additional questions not directly related to our hypotheses (e.g., identification with the blogger) were asked at the end of the survey and are reported in the supplement.

9.2. Results

9.2.1. Demographics
There was no significant association between gender and intent to share the post, $\chi^2(1) = 1.36$, $p = .24$. However, women ($M = 4.40$, $SD = 2.20$) were significantly more likely to show interest in the sponsoring company than men ($M = 3.52$, $SD = 1.85$), $F(1, 139) = 6.11$, $p = .015$, $\eta_p^2 = 0.04$ (and thus, we include gender in this analysis). Age was not correlated with either of the dependent variables.

9.2.2. Persuasiveness measures
9.2.2.1. Intent to share the post. There was a significant difference across the three conditions on intent to share the blog post, $\chi^2(2) = 8.06$, $p = .02$. Consistent with Hypothesis 1, relative to nondisclosure, COI disclosure placed at the end of the post increased intent to share from 32% to 64%, $\chi^2(1) = 7.96$, $p = .005$. Also, relative to nondisclosure, COI disclosure placed at the beginning of the post increased intent to share the post to 51%, but this difference was not quite significant, $\chi^2(1) = 2.65$, $p = .10$. There was no difference in intent to share across the two disclosure conditions (beginning vs. end), $\chi^2(1) = 2.13$, $p = .15$.

9.2.2.2. Interest towards the recommended company. A 3 (disclosure) × 2 (gender) ANOVA revealed a significant main effect of disclosure, $F(2, 135) = 4.56$, $p = .01$, $\eta_p^2 = 0.06$, and a significant main effect of gender,[3] $F(1, 135) = 8.15$, $p = .005$, $\eta_p^2 = 0.06$. There was no interaction between disclosure and gender, $F(2, 135) = 0.07$, $p = .94$. Again, consistent with Hypothesis 1, relative to nondisclosure ($M = 2.96$, $SD = 1.91$), the likelihood of clicking on the Apartment Guide link increased when the disclosure was placed at the beginning of the post ($M = 3.89$, $SD = 2.04$), $F(1, 135) = 4.61$, $p = .03$, $\eta_p^2 = 0.03$, and at the end of the post ($M = 4.12$, SD = 1.93), $F(1, 135) = 8.99$, $p = .003$, $\eta_p^2 = 0.06$. There was no significant difference in the likelihood of clicking when the disclosure was placed at the beginning versus the end of the post, $F(1, 135) = 1.21$, $p = .27$, $\eta_p^2 = 0.01$.

9.2.3. Recall of disclosure
Only 48% of participants said that they recalled the disclosure statement in the two disclosure conditions; the frequency of recall did not differ significantly between the disclosure conditions, $\chi^2(1) = 2.81$, $p = .09$, although, as expected, more did say they recalled the statement when the disclosure was at the beginning of the post (56%) than at the end (41%).

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[1] An unexplained glitch in the software meant some participants were unable to view the blog post – these participants were dropped from the analysis.

[2] For each study, we retained participants whether they skipped questions or not, therefore degrees of freedom vary slightly across measures.

[3] We included gender as a variable due to its significant effect on the dependent variable. The significant effect of disclosure does not change when gender is removed from the model.

9.3. Discussion

Supporting Hypothesis 1, we find that the presence of COI disclosures enhances persuasion, specifically intent to share the post (for disclosures at the end of the post) and interest towards the company recommended by the blogger (for disclosures both at the beginning and the end of the post). This effect of disclosure occurred even though only 48% of participants recalled the disclosure, suggesting that people may have reacted automatically to the disclosure. Placing the disclosure at the beginning of the post (vs. the end) may increase deliberation on the meaning of the disclosure, which would attenuate the positive effect of disclosure on persuasion: In this study, perhaps given the amount of competing information in the stimuli, these results were directional but non-significant. We test a stronger form of deliberation in the next study.

Overall, these results demonstrate that COI disclosure may provide a positive evaluative cue to consumers, increasing message persuasiveness. Even though the disclosure made the financial incentives between the blogger and the sponsoring organization explicit with the wording "which means I was paid to review their website in my blog," as suggested by the FTC, this acknowledgement did not prevent the use of the disclosure as a positive evaluative cue.

10. Study 3: Deliberation on conflict of interest disclosures increases perceptions of bias and reduces positive evaluations of the blogger and persuasion

The goal of this study was to assess the extent to which the positive effect of COI disclosure on persuasion observed in Study 2 is affected by readers' level of elaboration, i.e., automatic rather than deliberative processing. In selecting our moderator variable, we focused on the core premise of our theorizing, which is that the influence of COI disclosure depends on whether recipients engage in central or peripheral processing of the information. One way to encourage consumers to engage in central processing is to ask them to deliberate on the meaning of the COI disclosure. Research on the Elaboration Likelihood Model shows that encouraging consumers to scrutinize a target message (i.e., activating central processing) increases the likelihood that they will become less trusting of the message source (Petty & Cacioppo, 1986).

We predicted that the positive effect of COI disclosure on source credibility and persuasion would be mitigated or reversed when participants deliberated on the disclosure (Hypothesis 2), and that perceptions of bias and evaluations of the blogger (measures of source credibility) would serially mediate the effect of deliberation on persuasion (Hypothesis 2) rather than recall of the disclosure statement.

In this study, we also measured individual differences in the propensity to trust others (Mayer & Davis, 1999). This measure, which captures one's general level of skepticism, may influence the strength of disclosure's expertise cue or the effect of deliberation.

10.1. Methods

10.1.1. Participants and design

We planned to recruit approximately 50 participants per cell from Mturk between the ages of 18 and 26. One hundred and sixty-one participants (72 women, 89 men; M_{age} = 23.3, SD = 2.3) were randomly assigned to one of three conditions: nondisclosure, disclosure, and disclosure with deliberation.

10.1.2. Procedure

We used the same stimuli from study 2 and the disclosure always appeared at the end of the blog post. The nondisclosure and disclosure conditions were the same as in the previous study. In the deliberation condition, after participants read the target post, they were given the following prompt: *"Please write down any thoughts that come to mind when you read the following information at the end of Carly's blog: "This*

Table 3
Dependent variables by condition in Study 3.

	Condition (N = 161)		
	Nondisclosure	Disclosure	Disclosure with deliberation
% Intent to share the blog post	39%	58%	44%
Blogger evaluations	5.39 (1.15)	5.90 (0.94)	5.14 (1.58)
Perceptions of bias	3.98 (0.97)	3.93 (1.30)	4.55 (1.50)
% Recall of disclosure	N/A	55%	87%

Note: Standard deviations presented in parentheses.

posting was sponsored by Apartment Guide, which means that I was paid to review their website in my blog."

Two independent coders (intercoder reliability = 0.78; see equation 7, Perreault and Leigh (1989) for a description of the reliability calculation) coded the thought responses for the 54 participants in the deliberation condition. Each thought was coded as either positive (reflecting support for the message or blogger), negative (critical of the message or blogger), or neutral. We predicted that deliberation would result in a higher number of negative thoughts.

After reading the post and writing the thoughts about the disclosure in the deliberation condition, we measured persuasiveness by asking the same binary question from Study 2 regarding intentions to share the blog post. Next, we measured source credibility by asking participants' general impressions of the blogger with three bipolar scale items (negative/positive, bad/good, and dislike/like, 7-point scale). These items were averaged to form a composite score of blogger evaluations (Cronbach's α = 0.94). Following this, we measured perceptions of bias using three items (7-point scale, strongly disagree/strongly agree). There is a distinction between the presence of a COI and the presence of a bias (Lo & Ott, 2013; Sah & Feiler, 2018). In our measure, one item directly measured the perception of a COI ("There is a conflict of interest between Carly's interests and her readers' interests") and two items measured the perception of bias ("Carly's recommendations are likely to be biased"; and "Carly's recommendations have been unduly influenced by Apartment Guide"). Responses to all three items were averaged to form a measure of perceptions of bias (α = 0.76). Results are similar when examining responses by separating the items into perceived COI and perceived bias. We again asked participants if they recalled the disclosure statement in the two disclosure conditions.

We measured individual differences in trust propensity (Mayer & Davis, 1999) with a scale of eight statements (e.g., "These days, you must be alert or someone is likely to take advantage of you," "One should be very cautious with strangers"). Finally, we included the same items that appeared at the end of Study 2 as well as questions on how participants viewed sponsored blogs. These results are reported in the supplement.

10.2. Results

Table 3 presents means of the dependent variables for each of the three conditions.

10.2.1. Demographics

Women (56%) were marginally more likely to express intent to share the post than men (40%), $\chi^2(1)$ = 3.64, p = .06, but gender did not have a significant effect on evaluations of the blogger and perceptions of bias (ps > .21). Age was not correlated with any of the dependent variables (ps > .37).

10.2.2. Deliberation thought analysis

All 54 participants in the deliberation condition listed at least one thought in response to the deliberation prompt. Respondents listed 2.46 total thoughts on average (see supplement for examples). Of these,

about 20% were positive thoughts in support of the message or blogger, a larger proportion, 41%, were negative thoughts about the message or blogger, and 39% were neutral thoughts. These outcomes suggest that when respondents deliberated on disclosure, they were more likely to view the blogger or company negatively than they were to support the message, company or blogger.

10.2.3. Persuasiveness measure

Intent to share the post. We ran a logistic regression on the binary measure of intent to share with dummy variables for the disclosure conditions.[4] Consistent with Hypothesis 1, compared to nondisclosure, the presence of disclosure increased intent to share the blog from 39% to 58%, ($b = 0.88$, SE = 0.40, $p = .03$). There was no significant effect of deliberation ($b = 0.14$, SE = 0.40, $p = .73$), revealing that, contrary to Hypothesis 2a, prompting readers to elaborate on the disclosure did not increase nor decrease intent to share the blog (44%) compared to the nondisclosure condition. However, in line with Hypothesis 2b, prompting consumers to deliberate on the disclosure marginally decreased intent to share the blog relative to when the disclosure was processed more automatically ($b = -0.74$, SE = 0.41, $p = .07$). Encouraging deliberation decreased the positive evaluative cue from COI disclosure in line with our predictions but was not sufficient to reduce intent to share the blog beyond the level of nondisclosure.

10.2.4. Source credibility measures

10.2.4.1. Blogger evaluations.
Fig. 2A shows participants' evaluations of the blogger in each condition. A one-way ANOVA showed a significant effect of disclosure, $F(2, 158) = 5.15$, $p = .007$, $\eta_p^2 = 0.06$. In accordance with Hypothesis 1, the presence of disclosure increased evaluations of the blogger relative to nondisclosure, $F(1, 158) = 4.36$, $p = .04$, $\eta_p^2 = 0.03$. As predicted by Hypothesis 2b, prompting deliberation on the disclosure significantly decreased evaluations relative to disclosure alone, $F(1, 158) = 9.90$, $p = .002$, $\eta_p^2 = 0.06$. However, like the pattern seen with sharing the blog, there was no difference in evaluations between the deliberation and nondisclosure conditions, $F(1, 158) = 1.05$, $p = .31$.

Individual differences in trust propensity strengthened the effect of deliberation (see additional analysis in the supplement): Consistent with Hypothesis 2a, those participants who were low (vs. high) in trust propensity showed stronger effects with deliberation, significantly decreasing their evaluations of the blogger relative to the nondisclosure condition ($p = .02$).

10.2.4.2. Perceptions of bias.
A one-way ANOVA revealed a significant effect of disclosure, $F(2, 158) = 3.88$, $p = .02$, $\eta_p^2 = 0.05$ (see Fig. 2B). Perceptions of bias were similar in the nondisclosure and disclosure conditions, $F(1, 158) = 0.04$, $p = .85$. However, as expected, encouraging consumers to deliberate on the disclosure information significantly increased perceived bias relative to both the disclosure condition, $F(1, 158) = 6.33$, $p = .01$, $\eta_p^2 = 0.04$, and the nondisclosure condition, $F(1, 158) = 5.24$, $p = .02$, $\eta_p^2 = 0.03$. Thus, consistent with our rationale, COI disclosure only increased perceptions of bias when participants were prompted to deliberate on the disclosure information.

10.2.5. Recall of disclosure

Like Study 2, approximately half (55%) of participants in the disclosure condition said that they recalled the disclosure statement. Recall was significantly higher (87%) in the disclosure with deliberation condition, $\chi^2(1) = 13.87$, $p < .001$.
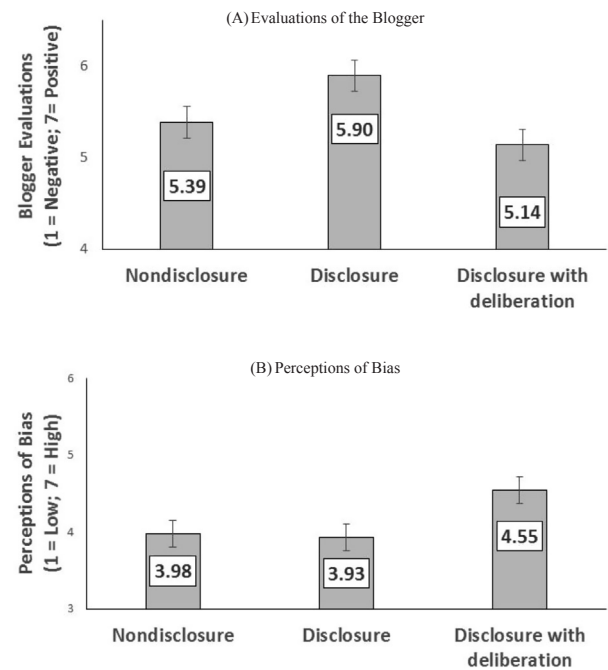
Fig. 2. The effect of disclosure and disclosure with deliberation on evaluations of the blogger (A) and perceptions of bias (B) in Study 3. Note: error bars are ± 1 SE.

10.2.6. Mediation analyses

We conducted bootstrapping mediation analyses (Hayes, 2013, PROCESS model 4) to test whether perceptions of bias mediated the effect of deliberation on intent to share the blog post and evaluations of the blogger (the disclosure condition was the reference condition and a dummy for nondisclosure was included as a covariate). We also conducted analyses for mediation with dichotomous variables (MacKinnon & Dwyer, 1993)[5] to test whether recall of the disclosure mediated the effect of deliberation on participants' intent to share the blog post and blogger evaluations.

Supporting Hypothesis 2, perceptions of bias mediated the effect of deliberation on both intent to share the post and blogger evaluations. The 95% confidence interval (CI) for the indirect effect did not contain zero for intent to share the post (indirect effect = −0.24, 95% CI [−0.60, −0.04]) or for evaluations of the blogger (−0.21, 95% CI [−0.48, −0.03]).[6] In contrast, recall of the disclosure statement did not mediate the effect of deliberation for intent to share (Sobel Z = 0.30) nor for blogger evaluations (Sobel Z = −0.72).

10.2.6.1. Serial mediation analysis.
We conducted bootstrapping mediation analyses (Hayes, 2013, 5000 resamples, PROCESS model 6) to test perceptions of bias and blogger evaluations (our measures of source credibility) as serial mediators of the effect of deliberation on intent to share the post (persuasiveness). The results support the prediction that deliberation on the COI disclosure increases perceptions of bias, which in turn decreases evaluations of the blogger and subsequently decreases persuasion. Fig. 3 presents the regression coefficients.

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[4] Gender was included as a variable in the logistic regressions models because women were more likely to share the blog than men. The results do not substantially change when we exclude gender from the model.

[5] We used a logistic mediation spreadsheet downloaded from http://www.nrhpsych.com/mediation/logmed.html to calculate the Sobel Z. A Z-score of 1.96 or higher indicates significance.

[6] Similar results were found when nondisclosure was the reference condition and a dummy for disclosure was included as a covariate in the mediation model; the 95% CIs for both intent to share and blogger evaluations did not include zero.

-.55*

Deliberation on Disclosure — .62* → Perceptions of Bias — -.34*** → Blogger Evaluations — .82*** → Intent to Share the Post
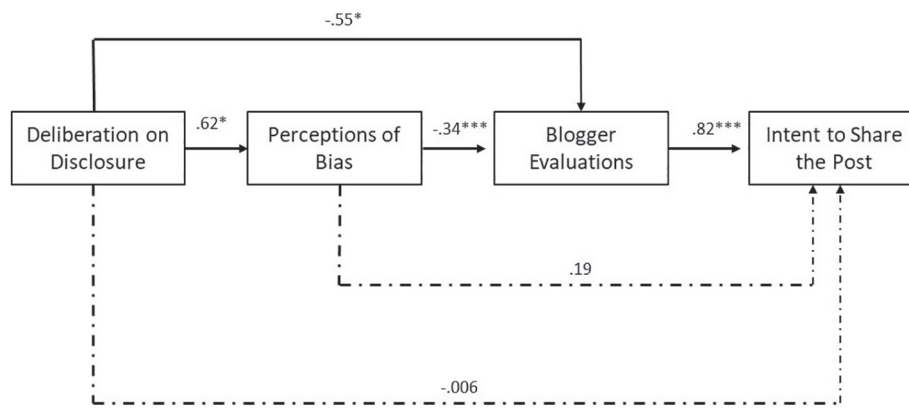
.19

-.006

Fig. 3. Serial mediation: Indirect effects of deliberation on intent to share the Post in Study 3. Note: unstandardized coefficients are shown in the diagram. The independent variable was a dummy variable for the disclosure with deliberation condition. The reference condition was disclosure and a dummy variable for the nondisclosure condition was included as a covariate in the model. The results are similar when nondisclosure is the reference condition and a dummy variable for disclosure is included as a covariate. $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Indirect effect via the two serial mediators: -.17, SE = 12, 95% CI: (-0.49, -0.02).

10.3. Discussion

Study 3 replicated our initial findings showing that the presence of a COI disclosure increased persuasion measured by readers' intent to share the blog with others. This study also extended these findings by showing that COI disclosure enhanced source credibility measured by general evaluations of the blogger. Notably, Study 3 shows that explicitly prompting participants to carefully think about the information presented in the disclosure increased perceptions of bias, mitigating, although not reversing (unless participants were low in trust propensity), the effect of disclosure on blogger evaluations and intent to share the blog post. Perceptions of bias mediated the effect of deliberation on decreasing evaluations of the blogger and consequently blogger persuasiveness. Thus, deliberation seems to turn off the use of disclosure as a positive evaluative cue, but does not necessarily lead to negative inferences about the blogger or the blogger's message unless the reader is low in trust propensity.

11. Study 4: Conflict of interest disclosures provide an expertise cue

The goal of this study was to test Hypotheses 1 and 3. We examined how COI disclosures affect trust in the blogger and whether the blogger's credibility mediated the relationship between COI disclosure and the blogger's persuasiveness.

The FTC and the Word of Mouth Marketing Association state that disclosures in the domain of social media should be explicit about the incentives that bloggers receive from an organization. However, bloggers may prefer to use more implicit wording about financial incentives, opting for a short, general statement indicating that a post was sponsored by a company or brand. To examine whether general disclosures of sponsorships (in which a financial relationship is implicit as opposed to explicit) have similar effects to the explicit disclosures we assessed in the previous two studies, we created two disclosure conditions for this study: one in which a financial relationship between the blogger and the sponsoring organization is left implicit and one in which the financial relationship between the blogger and the sponsoring organization is made explicit by the blogger acknowledging that she was paid to review the product.

11.1. Methods

11.1.1. Participants and design

We planned to recruit 150 participants for a three-cell between subjects design. One hundred and fifty-five students (65 women, 90 men; $M_{age} = 20.1$, $SD = 1.1$) from a private East Coast U.S. university were randomized to one of three conditions: nondisclosure, implicit disclosure, explicit disclosure.

11.1.2. Procedure

We used the same stimuli and procedures described in the previous studies, and the disclosures appeared at the end of the blog. The explicit disclosure had the same wording as in the previous two studies: "This posting is sponsored by Apartment Guide, which means I was paid to review their website in my blog." The implicit disclosure read "This posting is sponsored by Apartment Guide," i.e., the explanation of what sponsorship means was removed.

As in the previous study, we first asked readers their intention to share the post (persuasiveness measure) and their evaluations of the blogger (source credibility; $\alpha = 0.95$). As additional measures of persuasiveness, we added three bipolar items to assess the reader's evaluations of the company recommended by the blogger (7-point scales: negative/positive, bad/good, and dislike/like, $\alpha = 0.95$) as well as a one-item question on a 7-point scale (strongly disagree/strongly agree) on the likelihood of taking the advice: "I would take Carly's advice about the product she recommends." Perceptions of bias were measured as in the previous study ($\alpha = 0.78$) as was recall of the disclosure statement in the two disclosure conditions.

We also measured, on 7-point scales (strongly disagree/strongly agree), the blogger's trustworthiness along three dimensions: expertise, benevolence and integrity, adapted from Mayer & Davis (1999). Expertise consisted of the average of three items: "Carly is very capable of making good judgments", "Carly is well qualified for her role," and "I feel very confident about Carly's skills in product assessment" ($\alpha = 0.88$). Benevolence was the average of five items: "Carly is kind", "Carly is nice", "Carly would not knowingly do anything to hurt me", "Carly is concerned about my welfare", "Carly is selfish" (reverse coded) ($\alpha = 0.85$). Integrity consisted of the average of six items: "I expect Carly to tell me the truth if I asked for feedback on an idea related to my job," "If Carly gave me a compliment on my haircut I would believe she meant what she said," "Carly would not lie," "I can trust Carly's word," "Carly has a strong sense of justice" and "Carly tries hard to be fair in dealings with others" ($\alpha = 0.89$).

11.2. Results

Table 4 presents means of the dependent variables for each of the three conditions.

Table 4
Dependent variables by condition in Study 4.

	Condition (N = 155)		
	Nondisclosure	Implicit disclosure	Explicit disclosure
% Intent to share the blog post	39%	54%	51%
Evaluations of the featured company	4.63 (1.02)	4.95 (1.12)	5.03 (1.16)
Take the advice	4.39 (1.20)	4.90 (1.45)	5.02 (1.13)
Blogger evaluations	4.91 (1.35)	5.43 (1.28)	5.43 (1.40)
Blogger expertise	4.35 (0.93)	4.86 (0.96)	4.69 (0.97)
Blogger integrity	4.00 (0.84)	4.31 (0.89)	4.41 (0.72)
Blogger benevolence	4.94 (0.89)	5.30 (0.86)	5.21 (0.81)
Perceptions of bias	3.65 (0.87)	3.65 (1.22)	3.75 (1.26)
% Recall of disclosure	NA	42%	47%

Note: Standard deviations presented in parentheses.

11.2.1. Demographics

Women (59%) were more willing to share the blog post than men (40%), $\chi^2(1) = 5.16$, $p = .02$, and more likely to give higher evaluations of the company, $F(1, 153) = 7.60$, $p = .007$, and the blogger, $F(1, 153) = 9.84$, $p = .002$. Women also indicated that they were more likely to take Carly's advice, $F(1, 151) = 15.48$, $p < .001$, and gave higher ratings for trust in the blogger's expertise, $F(1, 149) = 8.85$, $p = .003$, but lower ratings of perceived bias, $F(1, 153) = 16.47$, $p < .001$. Thus, we include gender as a predictor in all statistical analyses.

11.2.2. Persuasiveness measures

11.2.2.1. Intent to share the post. We ran a logistic regression on the dichotomous measure of intent to share the blog to examine the effect of disclosure condition, gender and the interactions between gender and each of the disclosure conditions (implicit and explicit). Consistent with Hypothesis 1, the results revealed that both the implicit ($b = 1.39$, $SE = 0.68$, $p = .04$) and the explicit ($b = 1.40$, $SE = 0.62$, $p = .02$) disclosure significantly increased the intent to share the blog relative to the nondisclosure condition. In addition, there was a marginally significant interaction between gender and the explicit disclosure condition ($b = -1.61$, $SE = 0.83$, $p = .052$), revealing that explicit disclosures increased intentions to share the blog for women (nondisclosure: 38% vs. explicit disclosure: 71%) but not for men (nondisclosure: 39% vs. explicit disclosure: 35%). No other effects were significant ($ps > .18$).

11.2.2.2. Evaluations of the recommended company. A 3 (disclosure condition) × 2 (gender) ANOVA revealed a marginal effect of disclosure, $F(2, 149) = 2.68$, $p = .07$, $\eta_p^2 = 0.04$, a significant effect of gender, $F(1, 149) = 9.10$, $p = .003$, $\eta_p^2 = 0.06$, and no interaction, $F(2, 149) = 1.68$, $p = .19$. Women evaluated the company more positively ($M = 5.15$, $SD = 0.95$) than men ($M = 4.67$, $SD = 1.17$). Consistent with Hypothesis 1, contrasts revealed that both implicit, $F(1, 149) = 4.48$, $p = .04$, $\eta_p^2 = 0.03$, and explicit, $F(1, 149) = 3.40$, $p = .07$, $\eta_p^2 = 0.02$, disclosures enhanced evaluations of the company. There was no significant difference in evaluations between implicit and explicit disclosures, $F(1, 149) = 0.12$, $p = .73$.

11.2.2.3. Likelihood to take the advice. A 3 (disclosure condition) × 2 (gender) ANOVA revealed a significant effect of disclosure, $F(2, 147) = 4.16$, $p = .02$, $\eta_p^2 = 0.05$, a significant effect of gender, $F(1, 147) = 17.22$, $p < .001$, $\eta_p^2 = 0.11$, and no interaction, $F(2, 147) = 0.43$, $p = .65$. Women were more likely to report taking the advice ($M = 5.24$, $SD = 1.00$) than men ($M = 4.44$, $SD = 1.37$). Consistent with Hypothesis 1, contrasts revealed that both implicit, $F(1, 149) = 5.81$, $p = .02$, $\eta_p^2 = 0.03$, and explicit, $F(1, 149) = 6.54$, $p = .01$, $\eta_p^2 = 0.04$, disclosures enhanced the likelihood of taking

Carly's advice. There was no significant difference in likelihood of taking advice between implicit and explicit disclosures, $F(1, 149) < 0.001$, $p = .96$.

11.2.3. Source credibility measures

11.2.3.1. Blogger evaluations. A 3 (disclosure condition) × 2 (gender) ANOVA revealed two significant main effects and no interaction, $F(2, 149) = 0.21$, $p = .81$. Women evaluated the blogger more positively ($M = 5.65$, $SD = 1.11$) than men ($M = 4.97$, $SD = 1.46$), $F(1, 149) = 11.32$, $p = .001$, $\eta_p^2 = 0.07$. Importantly, the effect of disclosure was significant, $F(2, 149) = 3.36$, $p = .04$, $\eta_p^2 = 0.04$. Supporting Hypothesis 1, contrasts revealed that both implicit, $F(1, 149) = 5.73$, $p = .02$, $\eta_p^2 = 0.03$, and explicit disclosures, $F(1, 149) = 4.13$, $p = .04$, $\eta_p^2 = 0.02$, enhanced evaluations relative to nondisclosure. There was no significant difference in evaluations between implicit and explicit disclosures, $F(1, 149) = 0.20$, $p = .66$.

11.2.3.2. Trustworthiness. We ran a 3 (disclosure condition) × 2 (gender) ANOVA on each dimension of trust. Consistent with our theorizing, expertise was the dimension of trust with the strongest positive effect of COI disclosure. For expertise, we found a main effect of disclosure, $F(2, 145) = 4.99$, $p = .008$, $\eta_p^2 = 0.06$, and a main effect of gender, $F(1, 145) = 11.34$, $p = .001$, $\eta_p^2 = 0.07$. There was no interaction between disclosure condition and gender, $F(2, 145) = 0.40$, $p = .67$. Women ($M = 4.91$, $SD = 0.79$) perceived the blogger as more of an expert than men ($M = 4.44$, $SD = 1.04$). Relative to nondisclosure, perceived blogger expertise was higher when the post contained an implicit disclosure, $F(1, 145) = 9.86$, $p = .002$, $\eta_p^2 = 0.06$, or an explicit disclosure, $F(1, 145) = 3.28$, $p = .07$, $\eta_p^2 = 0.02$. There was no significant difference in perceived expertise between implicit and explicit disclosures.

Perceptions of blogger integrity and benevolence also increased in the presence of disclosure, although the effect on these two trust dimensions were weaker than expertise. For integrity, there was only a significant main effect of disclosure, $F(2, 147) = 3.39$, $p = .04$, $\eta_p^2 = 0.04$, no effect for gender, $F(1, 147) = 1.91$, $p = .17$, nor an interaction, $F(2, 147) = 0.37$, $p = .69$. Relative to the nondisclosure condition, contrasts revealed that the presence of an implicit, $F(1, 147) = 3.74$, $p = .055$, $\eta_p^2 = 0.02$, and explicit disclosure, $F(1, 147) = 6.09$, $p = .015$, $\eta_p^2 = 0.04$, increased perceptions of the blogger's integrity. There was no significant difference in perceived integrity between implicit and explicit disclosures ($p = .65$). Similarly, for benevolence, there was only a main effect of disclosure, $F(2, 149) = 3.04$, $p = .051$, $\eta_p^2 = 0.04$, and no effect for gender, $F(1, 149) = 0.55$, $p = .46$, nor an interaction, $F(2, 149) = 1.37$, $p = .26$. Relative to nondisclosure, implicit disclosure increased perceptions of blogger benevolence, $F(1, 149) = 5.92$, $p = .02$, $\eta_p^2 = 0.04$, but explicit disclosure did not, $F(1, 149) = 2.35$, $p = .13$, $\eta_p^2 = 0.01$. There was no significant difference in perceived benevolence between implicit and explicit disclosures ($p = .34$).

11.2.3.3. Perceptions of bias. A 3 (disclosure condition) × 2 (gender) ANOVA revealed that women ($M = 3.28$, $SD = 0.94$) were less likely to perceive bias than men ($M = 3.99$, $SD = 1.16$), $F(1, 149) = 16.66$, $p < .001$, $\eta_p^2 = 0.10$. There was no effect of disclosure, $F(2, 149) = 0.41$, $p = .67$, nor an interaction, $F(2, 149) = 0.06$, $p = .95$. As anticipated, the mere presence of a COI disclosure does not necessarily lead consumers to perceive the blogger as a biased source.

11.2.4. Mediation analyses

To test Hypothesis 3, we conducted bootstrapping mediation analyses (Hayes 2013, Model 4, 5000 resamples) to test the extent to which each dimension of trust accounted for the effect of disclosure on blogger evaluations and our three persuasiveness measures. We collapsed the two disclosures conditions for the mediation analyses. Fig. 4 presents the regression coefficients for blogger evaluations, intent to share the
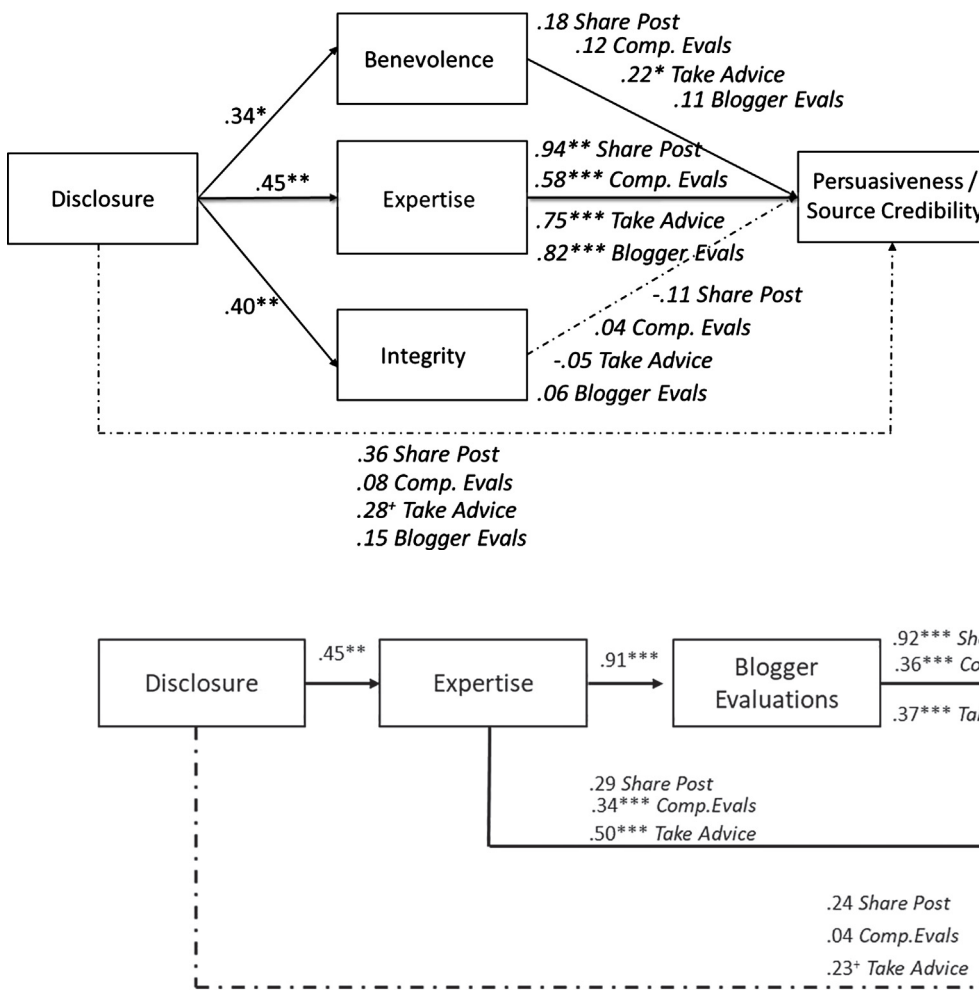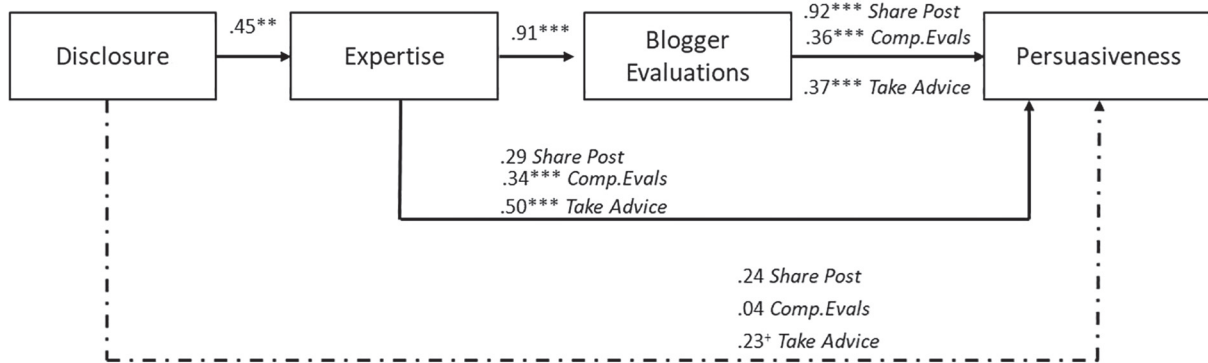
Fig. 4. Multiple mediation: indirect effects of disclosure via dimensions of trust in Study 4. Note: The independent variable was a dummy variable contrasting both disclosure conditions with the nondisclosure condition. Unstandardized coefficients are shown in the diagram for four dependent variables (each model was run separately): Intent to Share the Post (Share Post), Evaluations of the Recommended Company (Comp. Evals), Likelihood to Take the Blogger's Advice (Take Advice) and Blogger Evaluations (Blogger Evals). In each analysis, a dummy variable for gender was included as a covariate in the model. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Indirect effect via the two serial mediators; Share Post: .38, 95% CI: (.12, .82); Comp. Evals: .15, 95% CI: (.06, .29); Take Advice: .15, 95% CI: (.05, .31).

Fig. 5. Serial mediation: Indirect effects of disclosure on persuasiveness in Study 4. Indirect effect via the two serial mediators; Share Post: 0.38, 95% CI: (0.12, 0.82); Comp. Evals: 0.15, 95% CI: (0.06, 0.29); Take Advice: 0.15, 95% CI: (0.05, 0.31). Note: The independent variable was a dummy variable contrasting both disclosure conditions with the nondisclosure condition. Unstandardized coefficients are shown in the diagram for three dependent variables (each model was run separately): Intent to Share the Post (Share Post), Evaluations of the Recommended Company (Comp. Evals), and Likelihood to Take the Advice (Take Advice). In each analysis, a dummy variable for gender was included as a covariate in the model. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

post, evaluations of the company, and likelihood of taking the blogger's advice. Supporting Hypothesis 3, perceptions of expertise mediated the effect of disclosure (vs. nondisclosure) on all dependent measures (evaluation of the blogger: 0.37, 95% CI [0.14, 0.69], intent to share: 0.43, 95% CI [0.10, 1.01], evaluations of the recommended company: 0.26, 95% CI [0.09, 0.57], and taking the blogger's advice: 0.34, 95% CI [0.12, 0.64]).

Perceptions of integrity or benevolence did not mediate the effect of disclosure on any of the dependent variables, except for an indirect effect of disclosure via benevolence on taking the blogger's advice: 0.07, 95% CI [0.01, 0.20].

11.2.4.1. Serial mediation analysis. We conducted a serial mediation analysis (PROCESS, Model 6, 5000 resamples) with expertise and blogger evaluations as serial mediators of the effect of disclosure (vs. nondisclosure) on the three persuasiveness measures. The results support the prediction that disclosure increases perceptions of expertise, which in turn increases blogger evaluations and subsequently persuasion. Fig. 5 presents the regression coefficients for the serial mediation model.

11.2.5. Recall of disclosure

There was no difference in recall of the disclosure statement between the explicit (47%) and implicit (42%) disclosure conditions, $\chi^2(1) = 0.28$, $p = .60$.

11.3. Discussion

These results show that COI disclosures in the blogging context do not necessarily lead to perceptions of bias in the blogger, regardless of whether the wording of the disclosure makes the financial incentives implicit or explicit. This is consistent with work showing that COI is not a mere fact expressed by disclosure statements, but instead it is an inference made by the consumer who receives disclosure statements (Sah & Feiler, 2018).

In contrast to work showing that COI disclosures decrease trust (Sah & Feiler, 2018; Sah et al., 2013, 2018), we find that disclosures of corporate sponsorship can boost persuasiveness, enhancing intentions to share the blog, likelihood to take the blogger's advice and evaluations of the recommended company. Similar effects for different dimensions of persuasiveness support the convergent validity of these measures. These positive effects are driven by heightened perceptions

of blogger expertise and positive evaluations of the blogger. As predicted, COI disclosure served as an expertise cue and provided an endorsement of the blogger's ability to provide valuable advice to consumers. Perceived expertise mediated the effect of disclosure on evaluations of the blogger and subsequently persuasiveness.

12. Study 5: Deliberation on conflict of interest disclosures reduces blogger credibility and persuasiveness

Study 5 again examined the role of recipients' level of deliberation on the disclosure statement. We expected that deliberating on the disclosure would increase perceptions of bias, which should reduce all dimensions of trust, blogger evaluations, and persuasiveness relative to both nondisclosure and disclosure without prompted deliberation (Hypotheses 2 and 3).

12.1. Methods

12.1.1. Participants and design
Three hundred and one women (M_{age} = 35.0, SD = 11.0) recruited from Mturk completed the study and were randomly assigned to three conditions: nondisclosure, disclosure and disclosure with deliberation. We aimed at recruiting 100 participants per condition. We focused on women because the target stimulus was a beauty blog in which the blogger reviews a hair color product.

12.1.2. Procedure
We used a blog post from a blog titled "Gabi Fresh" (http://gabifresh.com/), which provides fashion and beauty advice to women. As in previous studies, recipients were shown a short bio of the blogger followed by a target post. The target post was titled "Lavender," and the blogger wrote about the experience of dyeing her hair purple using a semi-permanent color product. In the text of the post, the blogger mentions a specific brand, Ion Hair Color. The tone of the post is positive towards the brand.

In the nondisclosure condition, the blog post was presented with no COI disclosures. In the disclosure condition, at the bottom of the blog post, we placed a COI disclosure in bold that read "This post was sponsored by Ion Color Brilliance." (This wording is equivalent to the implicit disclosure in the previous study). In the disclosure with deliberation condition, the blog post included the same disclosure and on the following page, to prompt recipients to elaborate on the content of the disclosure, we gave them the following instructions: "Using the space below, please write down any thoughts that come to mind when you read Gabi's statement at the end of the post stating that 'This post was sponsored by Ion Color Brilliance'."

After viewing the post (and for those in the deliberation condition, after writing down their thoughts), we measured persuasion with recipients' willingness to share the blog (using a 7-point scale, very unlikely/very likely), evaluations of the recommended brand (α = 0.97) and likelihood to take Gabi's advice. Source credibility was again measured with blogger evaluations (α = 0.96), and perceived trust in the blogger was measured along the same three dimensions: expertise (α = 0.93), benevolence (α = 0.82), and integrity (α = 0.89). Perceptions of bias (α = 0.86) and individual differences in trust propensity (α = 0.70) were also measured using the same items from previous studies.

As in Study 3, we coded the deliberation thoughts of participants into positive, negative or neutral (intercoder reliability = 0.73). In addition, we measured participants' interest in beauty and hair products, "How interested are you in beauty and hair products," on a 7-point scale (not at all/very much so). We also measured evaluations of the post (interesting, useful, enjoyable, informative, valuable, α = 0.95) and this measure is reported in the supplement.

Table 5
Dependent variables by condition in Study 5.

	Condition (N = 301)		
	Nondisclosure	Disclosure	Disclosure with deliberation
Willingness to share the post	3.97 (1.84)	3.98 (1.83)	3.46 (2.07)
Evaluations of the featured brand	5.02 (1.43)	5.13 (1.42)	4.76 (1.54)
Take the advice	5.14 (1.38)	5.26 (1.27)	4.50 (1.65)
Blogger evaluations	5.90 (1.22)	5.94 (1.14)	5.36 (1.46)
Blogger expertise	5.35 (1.14)	5.38 (1.04)	4.90 (1.39)
Blogger integrity	4.78 (0.84)	4.93 (0.91)	4.53 (1.14)
Blogger benevolence	5.19 (0.89)	5.31 (0.85)	4.99 (0.96)
Perceptions of bias	3.31 (1.30)	3.75 (1.37)	4.33 (1.33)

Note: Standard deviations presented in parentheses.

12.2. Results

Table 5 presents the mean for the dependent variables for each of the three conditions.

12.2.1. Age and interest in beauty products
Age was significantly correlated with perceived bias (r = $-$0.13, p = .03) and marginally correlated with evaluations of the post (r = 0.11, p = .07). Interest in beauty and hair products was significantly correlated with all dependent measures ($ps \leq$ .003) except perceived bias (p = .21), therefore we include general interest in beauty products as a covariate in all the analyses.

12.2.2. Deliberation thought analysis
Analysis revealed that each of the 101 respondents in the deliberation condition listed at least one thought. Respondents listed a mean of 2.03 thoughts. Of these, about 17% were positive thoughts in support of the message or blogger, a larger proportion, 39%, were negative thoughts about the message or blogger, and 44% were neutral thoughts (see supplement for example thoughts in each category). Consistent with Study 3, when respondents deliberated on the disclosure they were more likely to view the blogger or brand negatively than to support the message, brand or blogger.

12.2.3. Statistical analyses
To test our hypothesis that disclosure with deliberation would reduce source credibility and persuasion compared to both the nondisclosure and disclosure conditions, we conducted a one-way ANCOVA on all dependent measures. For each variable, we compared the means between nondisclosure versus the disclosure condition (Hypothesis 1) and the effect of the disclosure with deliberation condition versus both the disclosure and nondisclosure conditions (Hypothesis 2).

In contrast to the prior studies, in this study the pairwise contrasts between the nondisclosure and disclosure conditions did not reach significance. As we elaborate in the discussion section, the stimuli in this study contained less competing information relative to the blog post used in the prior studies and we suspect that this led to greater spontaneous deliberation on the COI disclosure.

12.2.4. Persuasiveness measures
12.2.4.1. Willingness to share the post. A one-way ANCOVA on participants' willingness to share the blog post with disclosure as a between-subject factor and interest in beauty as a covariate showed a significant effect of disclosure, $F(2, 297)$ = 4.04, p = .02, η_p^2 = 0.03. The pairwise contrast between the nondisclosure and the disclosure condition was not significant, $F(1, 297)$ = 0.03, p = .86. However, consistent with Hypothesis 2, willingness to share the blog was lower in

the deliberation condition relative to both the nondisclosure condition, $F(1, 297) = 5.58$, $p = .02$, $\eta_p^2 = 0.02$, and the disclosure condition, $F(1, 297) = 6.50$, $p = .01$, $\eta_p^2 = 0.02$.

12.2.4.2. Evaluations of the recommended brand. A one-way ANCOVA showed a significant effect of disclosure, $F(2, 297) = 3.09$, $p = .05$, $\eta_p^2 = 0.02$. Means were similar between nondisclosure and disclosure conditions, $F(1, 297) = 0.49$, $p = .49$, but prompting deliberation marginally decreased brand evaluations relative to nondisclosure, $F(1, 297) = 2.93$, $p = .09$, $\eta_p^2 = 0.01$, and significantly reduced brand evaluations relative to the disclosure condition, $F(1, 297) = 5.84$, $p = .02$, $\eta_p^2 = 0.02$.

12.2.4.3. Likelihood to take the advice. A one-way ANCOVA showed a significant effect of disclosure, $F(2, 297) = 9.46$, $p < .001$, $\eta_p^2 = 0.06$. Means were similar between nondisclosure and disclosure conditions, $F(1, 297) = 0.44$, $p = .51$, but prompting deliberation significantly decreased likelihood to take the advice both relative to nondisclosure, $F(1, 297) = 11.46$, $p = .001$, $\eta_p^2 = 0.04$, and relative to the disclosure condition, $F(1, 297) = 16.46$, $p < .001$, $\eta_p^2 = 0.05$.

12.2.5. Source credibility measures

12.2.5.1. Blogger evaluations. The same ANCOVA on blogger evaluations showed a significant effect of disclosure condition, $F(2, 297) = 8.79$, $p < .001$, $\eta_p^2 = 0.06$. The pairwise contrast between the nondisclosure and the disclosure condition was not significant, $F(1, 297) = 0.10$, $p = .75$. However, consistent with Hypothesis 2, blogger evaluations were significantly lower in the deliberation condition relative to both the nondisclosure, $F(1, 297) = 11.92$, $p < .001$, $\eta_p^2 = 0.04$, and disclosure conditions, $F(1, 297) = 14.33$, $p < .001$, $\eta_p^2 = 0.05$.

12.2.5.2. Trustworthiness. For each dimension of trust, we ran a one-way ANCOVA. There was a significant effect of disclosure condition on all three trust dimensions: expertise, $F(2, 297) = 6.18$, $p = .002$, $\eta_p^2 = 0.04$, benevolence, $F(2, 297) = 4.08$, $p = .02$, $\eta_p^2 = 0.03$, and integrity, $F(2, 297) = 5.89$, $p = .003$, $\eta_p^2 = 0.04$. Pairwise contrasts between the nondisclosure and disclosure conditions did not reach significance for any trust dimension ($ps > .21$). However, following Hypothesis 2, encouraging participants to deliberate on the disclosure reduced perceptions of expertise relative to both the nondisclosure, $F(1, 297) = 8.36$, $p = .004$, $\eta_p^2 = 0.03$, and disclosure conditions, $F(1, 297) = 10.11$, $p = .002$, $\eta_p^2 = 0.03$.

The same pattern, albeit weaker, was observed for benevolence and integrity. Deliberation reduced perceived benevolence compared to the nondisclosure, $F(1, 297) = 3.19$, $p = .08$, $\eta_p^2 = 0.01$, and disclosure, $F(1, 297) = 7.98$, $p = .005$, $\eta_p^2 = 0.03$. Deliberation also reduced perceived integrity compared to the nondisclosure, $F(1, 297) = 4.53$, $p = .03$, $\eta_p^2 = 0.02$, and disclosure conditions, $F(1, 297) = 11.52$, $p = .001$, $\eta_p^2 = 0.04$.

12.2.5.3. Perceptions of bias. A one-way ANCOVA on perceptions of bias revealed a significant effect of disclosure condition, $F(2, 297) = 15.46$, $p < .001$, $\eta_p^2 = 0.09$. Contrasts show that, consistent with our proposed rationale for why deliberation on the disclosure reduces persuasiveness, participants in the deliberation condition perceived greater bias in the blogger than participants in the nondisclosure condition, $F(1, 297) = 30.62$, $p < .001$, $\eta_p^2 = 0.09$, and the disclosure condition, $F(1, 297) = 10.38$, $p = .001$, $\eta_p^2 = 0.03$. Interestingly, perceived bias in the disclosure condition was significantly higher than perceived bias in the nondisclosure condition, $F(1, 297) = 5.42$, $p = .02$, $\eta_p^2 = 0.02$, supporting the premise that participants spontaneously deliberated more on the disclosure in this study than in the previous studies.

12.2.6. Mediation analyses

12.2.6.1. Serial mediation analysis. In our proposed framework (Fig. 1), deliberation on disclosure reduces blogger's persuasiveness by increasing perceptions of bias, which reduces perceived expertise, and in turn reduces evaluations of the blogger and finally message persuasiveness. To test this indirect effect, we conducted serial mediation analysis (PROCESS Model 6, 5000 resamples) with perceptions of bias, expertise and blogger evaluations as serial mediators of the effect of deliberation on our three measures of blogger persuasiveness. The results support the prediction that deliberating on the disclosure increases perceptions of bias, which in turn decreases trust in the blogger's expertise and decreases positive evaluations of the blogger, resulting in lower persuasiveness. Fig. 6 presents the regression coefficients.

12.2.6.2. Multiple mediation analysis. As deliberating on the disclosure influenced not only perceptions of expertise but also perceptions of integrity and benevolence, we conducted an additional multiple mediation analysis in which all three dimensions of trust (expertise, integrity and benevolence) were included as potential mediators to examine the relationship between disclosure and persuasiveness (PROCESS Model 4, 5000 resamples). As predicted, perceptions of expertise mediated the effect of deliberation on blogger evaluations and all three measures of persuasiveness. Perceptions of expertise and benevolence mediated the relationship between deliberation and evaluations of the blogger (expertise: -0.28, 95% CI [-0.49, -0.10]; benevolence: -0.08, 95% CI [-0.20, -0.003]), as well as willingness to share the post (expertise: -0.24, 95% CI [-0.50, -0.07]; benevolence: -0.14, 95% CI [-0.35, -0.002]). Only expertise mediated the relationship between deliberation and evaluations of the recommended brand (-0.20, 95% CI [-0.40, -0.06]). Expertise and integrity mediated the relationship between deliberation and taking the blogger's advice (expertise: -0.32, 95% CI [-0.57, -0.10]; integrity: -0.08, 95% CI [-0.22, -0.008]).

12.3. Discussion

Taken together, these results support Hypotheses 2 and 3. Prompting consumers to carefully think about and elaborate on the disclosure increases perceptions of bias, which in turn, reduces perceptions of expertise and subsequently blogger evaluations and persuasiveness (measured by willingness to share the post, evaluations of the featured brand and taking the advice). As with the earlier studies, the similar findings across different measures of persuasiveness support the convergent validity of these measures.

Notably, the results of the positive effects of disclosure on source credibility and persuasiveness when recipients were not prompted to deliberate (Hypothesis 1) were not as strong in this study compared to the previous ones, although some variables trended in the expected direction. Many factors influence the attention, encoding and deliberative processing of disclosures, including the size, location/placement, color/contrast, wording, and length of the disclosures (Cowley & Wogalter, 2011; Laughery & Wogalter, 2006). Compared to the previous studies, this experiment used a blog post that was relatively easier to process. The post was much shorter – approximately 160 words (versus approximately 700 words for the post used in the previous studies), with a minimalist layout (no comments or advertisements on the side bar nor reader comments at the end of the post). Thus, the disclosure statement was more salient. We suspect the lower information load may have encouraged more spontaneous deliberation on the disclosure. However, it is interesting that only when we explicitly prompted participants to deliberate on the meaning of the disclosure did we find a reduction in credibility and persuasiveness compared to the nondisclosure condition. This shows that the effectiveness of using disclosures as an instrument to protect consumers from potentially biased advice is contingent on devoting substantial attention to the
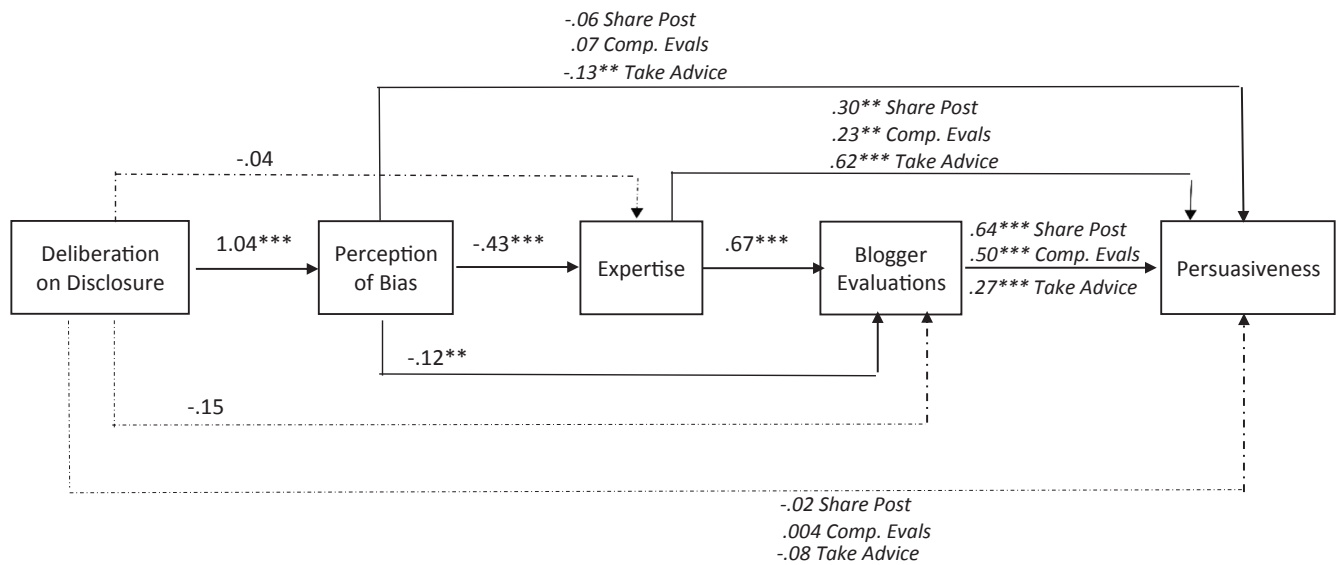
Indirect effect via the three serial mediators; Share Post: -.19, 95% CI: (-.34, -.09); Comp. Evals: -.15, 95% CI: (-.26, -.07); Take Advice: -.08, 95% CI: (-.16, -.03).

Fig. 6. Serial mediation: Indirect effects of deliberation on persuasiveness in Study 5. Note: The independent variable was a dummy variable for the disclosure with deliberation condition. Unstandardized coefficients are shown in the diagram for three dependent variables (each model was run separately): Willingness to Share the Post (Share Post), Evaluations of the Recommended Company (Comp. Evals), and Likelihood to Take the Advice (Take Advice). The regression model included two covariates: a dummy variable for the disclosure condition and individual differences in participants' interest towards beauty products. $^{*}p < .05$, $^{**}p < . 01$, $^{***}p < .001$.

meaning of the disclosure content. Finally, it is important to note that although deliberating on the disclosure reduced all three dimensions of trust, it was the decrease of trust in the blogger's expertise that accounted for the negative effect of deliberation on participants' responses to the blogger. This primacy of the expertise dimension supports recent research suggesting that consumers place greater importance on competence-related traits of service providers than on morality-related traits (Kirmani et al., 2017).

Our manipulation to encourage participants to deliberate on the meaning of the disclosure was strong, and may have led to a demand effect; participants were presented with the disclosure statement and told to think about and write down their thoughts on its meaning. To establish whether it was deliberation rather than a demand effect that led to reduced source credibility and persuasion, our next experiment examines individual differences in the propensity to deliberate.

13. Study 6: Subtle deliberation, as measured by individual differences in Need for Cognition, mitigates the expertise cue

This study builds on the previous one to examine the effects of deliberation on COI disclosures, but in a subtle way by using individual differences in Need for Cognition (Cacioppo, Petty, & Kao, 1984), which serves as a proxy for the likelihood to engage in deliberation. Need-for-cognition is an individual difference variable that is associated with individuals' tendency to engage in and enjoy thinking. This measure is expected to capture the extent to which participants deliberate on a given target message. Without explicitly prompting participants to deliberate on the disclosure information (which could create a demand effect for participants to react to the disclosure in a certain way), we expect that participants high in need-for-cognition will be more likely to deliberate on the disclosure, which should attenuate or reverse the expertise cue effect.

13.1. Methods

13.1.1. Participants, design and procedure

We intended to recruit 300 women from Mturk to participate in a study, using the same target stimulus from Study 4 (Gabi Fresh blog). Three hundred and eight participants took the survey ($M_{age} = 25.3$, $SD = 3.5$). Four participants did not report gender and two participants were males; these six participants were excluded from the sample. Fourteen participants did not fully complete the need-for-cognition scale; therefore, our final sample for analyses including need-for-cognition was 288 participants.

Women were randomly assigned to one of two conditions (nondisclosure vs. disclosure) using the same procedure from Study 5, except that, in the disclosure condition, the disclosure, "The following post was sponsored by Ion Color Brilliance," appeared by itself on the page prior to the target post. As the disclosure statement appeared alone with no conflicting information, and before the blog post, we suspected that all participants would deliberate on it more, but especially those participants high in need-for-cognition.

We measured bloggers' persuasiveness with the following measures used in the previous studies: willingness to share the blog, evaluations of the recommended brand ($\alpha = 0.94$), and likelihood to take Carly's advice. In addition, we included two items (averaged) which measured interest in following Gabi's blog on a scale of 1 (not at all) to 7 (very much): "How interested would you be in following Gabi's blog?"; and "How interested would you be in Gabi's future recommendations?" ($\alpha = 0.96$).

Source credibility was again measured with blogger evaluations ($\alpha = 0.94$), and trust in the blogger's expertise ($\alpha = 0.87$), benevolence ($\alpha = 0.79$), and integrity ($\alpha = 0.87$). Perceptions of bias ($\alpha = 0.73$) and interest in beauty and hair products were measured as in Study 4. The 18-item 5-point Need for Cognition scale from Cacioppo et al. (1984) served as the moderating variable in the study ($\alpha = 0.91$; e.g., "I

usually end up deliberating about issues even when they do not affect me personally," see the supplement for the complete list of items).

At the end of the study, participants recalled whether the post included a disclosure statement (yes/no/unsure) and wrote down any thoughts they had while reading Gabi's blog post. These and other questions not directly related to our hypotheses are reported in the supplement.

13.2. Results

13.2.1. Age and general interest in beauty products

Age was significantly correlated with perceived integrity ($r = -0.12$, $p = .03$). As in Study 4, interest in beauty and hair products was significantly correlated with all dependent measures ($ps < .01$), therefore we included interest in beauty as a covariate in all analyses.

13.2.2. Statistical analyses

The mean for the need-for-cognition scale was 3.51 ($SD = 0.70$). We expected that COI disclosure, even if given before the blog post, would provide a positive expertise cue for those with low levels of need-for-cognition, but this positive effect should be attenuated or reversed at higher levels of need-for-cognition. To test our hypothesis, we regressed each dependent variable on a dummy variable for disclosure, mean centered values of need-for-cognition, the interaction between disclosure and need-for-cognition, and interest in beauty. To probe the interaction effect, we examined the effect of disclosure at three levels of need-for-cognition: 1 SD below the mean, at the mean, and at 1 SD above the mean (Hayes's Process Macro, Model 1, 5000 bootstrap samples). There were no significant effects of the disclosure manipulation and need-for-cognition on evaluations of the blogger ($ps > .36$) and of the brand ($ps > .40$), thus these variables are not discussed further.

13.2.3. Persuasiveness measures

13.2.3.1. Willingness to share the blog. The regression results indicated a marginal positive effect of disclosure ($b = 0.34$, SE = 0.20, $t = 1.68$, $p = .09$), and a marginal disclosure by need-for-cognition interaction ($b = -0.53$, SE = 0.29, $t = -1.83$, $p = .07$). Probing the interaction, we observe that the lower the need-for-cognition, the stronger the positive effect of disclosure. The presence of a COI disclosure significantly increased willingness to share the blog at low levels of need-for-cognition ($b = 0.72$, SE = 0.29, $t = 2.48$, $p = .01$) and marginally increased willingness to share the blog at mean levels of need-for-cognition ($b = 0.34$, SE = 0.20, $t = 1.68$, $p = .09$). However, the effect is mitigated at high levels of need-for-cognition ($b = -0.03$, SE = 0.29, $t = -0.11$, $p = .91$).

13.2.3.2. Likelihood to take the advice. Similarly, results for taking Gabi's advice showed a disclosure by need-for-cognition interaction ($b = -0.42$, SE = 0.20, $t = -2.10$, $p = .04$). The presence of a COI disclosure increased the reported likelihood to take Gabi's advice at low levels of need-for-cognition ($b = 0.46$, SE = 0.20, $t = 2.28$, $p = .02$), but not at the mean ($b = 0.16$, SE = 0.14, $t = 1.14$, $p = .26$) or high levels of need-for-cognition ($b = -0.14$, SE = 0.20, $t = -0.68$, $p = .50$).

13.2.3.3. Interest in following the blog. Interest in following the blog also yielded a disclosure by need-for-cognition interaction ($b = -1.00$, SE = 0.25, $t = -4.10$, $p < .001$). COI disclosure increased interest at low levels of need-for-cognition ($b = 0.89$, SE = 0.24, $t = 3.66$, $p < .001$), but this positive effect was attenuated at the mean ($b = 0.19$, SE = 0.17, $t = 1.10$, $p = .27$) and reversed at high levels of need-for-cognition ($b = -0.52$, SE = 0.24, $t = -2.13$, $p = .03$).

13.2.4. Source credibility measures

13.2.4.1. Trustworthiness. For expertise, there was a disclosure by need-for-cognition interaction ($b = -0.36$, SE = 0.17, $t = -2.16$, $p = .03$). The conditional effects at 1 SD below or above the mean of need-for-cognition did not reach statistical significance, but were directionally consistent with our hypothesis, shifting from positive (at low need-for-cognition levels: $b = 0.25$, SE = 0.17, $t = 1.47$, $p = .14$) to negative (at high need-for-cognition levels: $b = -0.26$, SE = 0.17, $t = -1.59$, $p = .11$). Further probing the interaction, using the Johnson-Newman procedure (Hayes 2013), we see that at lower levels of need-for-cognition (1.77 and below), disclosure significantly enhances perceived expertise ($b = 0.62$, SE = 0.31, $t = 1.97$, $p = .05$), whereas at very high levels of need-for-cognition (4.90 and above), it decreases perceived expertise ($b = -0.51$, SE = 0.26, $t = 1.97$, $p = .05$).

For integrity, there was also an interaction ($b = -0.29$, SE = 0.14, $t = -2.02$, $p = .04$). Disclosure did not affect perceptions of integrity at low ($b = 0.14$, SE = 0.14, $t = 0.98$, $p = .33$) and mean levels of need-for-cognition ($b = -0.06$, SE = 0.10, $t = -0.63$, $p = .53$), but marginally decreased perceived integrity for those high in need-for-cognition ($b = -0.27$, SE = 0.14, $t = -1.88$, $p = .06$).

Finally, for benevolence, there was again an interaction ($b = -0.33$, SE = 0.14, $t = -2.39$, $p = .02$). Although the conditional effects at 1 SD below or above the mean did not reach statistical significance, the effect of disclosure shifted from marginally positive at low levels of need-for-cognition ($b = 0.23$, SE = 0.14, $t = 1.66$, $p = .10$) to nonsignificant at the mean ($b = -0.003$, SE = 0.10, $t = -0.03$, $p = .97$) to marginally negative at high levels of need-for-cognition ($b = -0.23$, SE = 0.14, $t = -1.72$, $p = .09$).

13.2.4.2. Perceptions of bias. Disclosure increased perceptions of bias regardless of participants' need-for-cognition level ($b = 0.57$, SE = 0.14, $t = 4.14$, $p < .001$). The lack of an interaction between disclosure and participants' need-for-cognition was an unexpected result. We predicted that disclosure would evoke perceptions of bias only for those who were high in need-for-cognition. One explanation for the increase in perceived bias for those who are less likely to engage in deliberation is that the COI disclosure in this study was salient, appearing on the page before participants read the blog post. Interestingly though, the increase in perceived bias was not sufficient to turn off the positive effect of disclosure, as demonstrated by the positive effects of disclosure at low levels of need-for-cognition for several persuasion and credibility measures.

13.2.5. Mediation analysis

We conducted mediation analyses to examine the extent to which each dimension of trust mediated the interactive effect of disclosure and need-for-cognition on the blogger's persuasiveness (Process, Model 4, 5000 resamples). Regression coefficients are presented in Fig. 7. Consistent with our rationale, perceptions of the blogger's expertise mediated the interactive effect of disclosure and need-for-cognition on three persuasion measures: willingness to share the blog post, likelihood of taking the blogger's advice, and interest in following the blog. Perceived integrity also mediated the interaction of disclosure by need-for-cognition on interest in following the blog.

13.2.6. Recall of disclosure

In the disclosure condition, only 14% of participants recalled the disclosure statement, 48% did not recall it, and 38% were unsure. In the control condition, 6% recalled the disclosure statement, 60% did not recall it, and 34% were unsure. Our wording of this question "Did Gabi's blog post contain any disclosure statement?" may have inadvertently influenced these results, limiting our interpretation of these results, as the disclosure was actually on the page before the post rather than in the blog post.
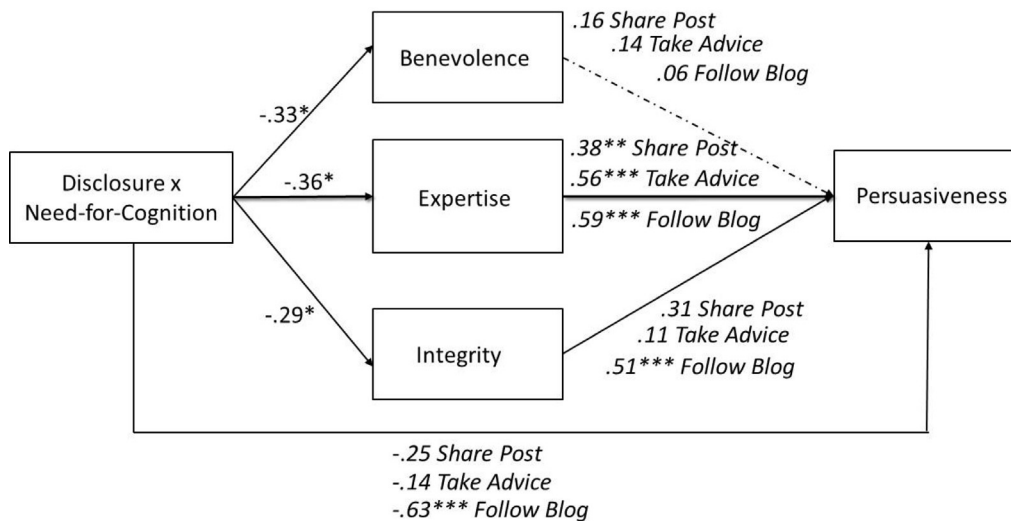
Fig. 7. Multiple mediation: Indirect effects of disclosure and need-for-cognition via dimensions of trust in Study 6. Note: Disclosure × need-for-cognition was the product of the dummy-coded variable for disclosure and mean-centered values for need-for-cognition. Unstandardized coefficients are shown in the diagram for three dependent variables (each model was run separately): Willingness to Share the Post, Likelihood to Take the Advice and Interest in Following the Blog. In each analysis, a dummy variable for disclosure condition, mean-centered scores for need-for-cognition and participants' general interest in beauty were included as covariates in the model. $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Indirect effect via benevolence; Share Post: -.05, 95% CI: (-.24, .03); Take Advice: -.05, 95% CI: (-.18, .02); Follow Blog: -.02, 95% CI: (-.15, .05).

Indirect effect via expertise; Share Post: -.14, 95% CI: (-.37, -.02); Take Advice: -.20, 95% CI: (-.42, -.02); Follow Blog: -.21, 95% CI: (-.47, -.02).

Indirect effect via integrity; Share Post: -.09, 95% CI: (-.29, .01); Take Advice: -.03, 95% CI: (-.16, .02); Follow Blog: -.15, 95% CI: (-.35, -.01).

13.3. Discussion

This study used an individual difference measure to capture participants' tendency to deliberate on a target message. Without specifically prompting participants to elaborate on the disclosure or think about the meaning of the disclosure, the results support our hypothesis that COI disclosures provide a positive heuristic cue for those who process the target message automatically. As individuals' need-for-cognition increased, we observed an attenuation or reversal of this positive effect on several persuasion measures (willingness to share, likelihood to take the advice and interest in following the blog) and the blogger's trustworthiness. As expected, expertise of the blogger mediated the disclosure by need-for-cognition interactive effect on persuasion. This positive effect of disclosure (for those who are less likely to engage in thinking) occurred even though the disclosure increased perceptions of bias. However, deliberative processing, as measured by an individual's need-for-cognition, mitigated and sometimes reversed effects of disclosure's expertise cue.

14. General discussion

Taken together, our studies show that conflict of interest (COI) disclosures can increase trust in an advisor's expertise and subsequently persuasiveness. Field data from fashion and beauty blogs also support the hypothesis that COI disclosures can provide a positive evaluative cue. Importantly, we find that perceptions of the blogger's expertise mediate the relationship between COI disclosure and the blogger's persuasiveness. Finally, deliberation on the disclosure of COI mitigates and sometimes reverses these effects.

14.1. Theoretical contributions

Our findings contribute to research on COI disclosures, persuasion and advice giving in several important ways. First, our findings potentially help reconcile some of the earlier research that shows

disparate outcomes of COI disclosure. Some prior research found that advisees report lower trust in advisors who disclose a COI (Sah & Feiler, 2018; Sah et al., 2013), whereas other research revealed increased trust in advisors and agents who disclose a bias or COI (Abendroth & Heyman, 2013; Carl, 2008; Sah et al., 2016). Our hypothesis is that the level of elaboration that the disclosure receives is a moderator that could account, at least in part, for these seemingly conflicting outcomes. Specifically, in prior research, participants who played the role of advisees, were often presented with simple decisions in a context devoid of much richness or clutter, for example, which die-roll lottery to choose (Sah & Feiler, 2018; Sah et al., 2013), and the COI disclosure was likely to be particularly salient to participants (Sah et al., 2013). In these situations, participants very likely deliberated on the meaning of the disclosure and, consistent with our theorizing, trust was reduced compared to nondisclosure.

In contrast to the decreased trust seen in the above studies, we found that disclosures in context-rich domains, such as online blogging, can lead to greater trust in the advisor's expertise. Whereas much of the research in the word-of-mouth domain examined other constructs of source credibility such as integrity, benevolence or sincerity, rather than expertise, the finding in this paper is consistent with, and extends, recent work on specialty bias disclosure (Sah et al., 2016). Thus, COI disclosure by an advisor can provide a heuristic cue for trust in the expertise of the advisor. Greater perceptions of expertise, in turn, enhances recipients' evaluations of the advisor. In the real world, most advisor-advisee relationships (e.g., physicians-patients, financial advisors-clients, opinion leaders hired as brand ambassadors and consumers, etc.) involve information-rich contexts, requiring advice recipients to integrate multiple pieces of information when forming their judgments. Our work suggests that amidst this richness, COI disclosure statements are insufficient to substantially decrease source credibility and persuasion, and may lead to positive effects on both persuasion related outcomes and source credibility, particularly for individuals who are low in need-for-cognition.

The present research also adds to the body of work on the

unintended consequences of COI disclosures (Sah, 2016) by documenting a new mechanism by which disclosures can lead to greater persuasion. In much of the previous research, greater persuasion with COI disclosure was often due to social pressures experienced by the advisee to comply with advice (Sah et al., 2013, 2018). However, the increased persuasion was accompanied by lower trust in the advisor, suggesting that participants went along with the advice despite the fact that they did not trust the advisor. In contrast, in our research, the greater persuasion with the blogger's advice is accompanied with greater trust in the blogger. Thus, unlike much of the prior COI research, our research shows that under certain conditions, disclosures of COIs can enhance trust in the advisor's expertise, and in turn, persuasion. For individuals who are high in need-for-cognition, these positive evaluations of the advisor, and subsequent persuasion, are mitigated and sometimes reversed. Deliberation on the disclosure is an important moderating variable that can explain whether COI disclosure leads to greater or less trust in the advisor.

In this paper, we focus on COI disclosures that come directly from the blogger. Disclosures, however, could also come from other sources. This raises the question of whether it is the information in the disclosure or the blogger's act of disclosing that determines the outcomes we observe. Our view is that it is the information from the disclosure (regarding the sponsorship) that drives the effect of disclosure on perceptions of the blogger's expertise rather than the act of the blogger disclosing herself. Evidence consistent with this line of reasoning comes from prior research.

Previous research that has manipulated the source of the disclosure to be either directly from the advisor or from another source (a third-party) shows similar levels of trust. This finding occurs in both simple advice contexts in which disclosures were salient and recipients were likely to have deliberated on the disclosure, reducing perceptions of trust (for all dimensions: integrity, benevolence and expertise) relative to non-disclosure (Sah & Feiler, 2018; Sah et al., 2013, 2018),[7] and also in the word-of-mouth domain in which disclosures were likely to have been processed automatically leading to positive effects of disclosure (Carl, 2008; Tuk et al., 2009).

In the word-of-mouth domain, if recipients felt *deceived* (Abendroth & Heyman, 2013) by the lack of disclosure from the agent (i.e., they discovered later that the agent *failed* to disclose), perceptions of integrity decreased relative to disclosure by the agent during the event (Abendroth & Heyman, 2013; Carl, 2008; Tuk et al., 2009). Thus, if the manner of the third-party disclosure leads recipients to think that the agent deliberately withheld information, perceptions of integrity (a dimension of trust that captures perceptions of honesty) could decrease relative to direct disclosure from the agent. Interestingly, even if integrity decreased, perceptions of expertise and purchase intentions were often unaffected and similar for both direct and third party disclosures (Carl, 2008; Tuk et al., 2009).

These findings offer support for our view that it is the information regarding the blogger's sponsorship within the disclosure itself that serves as the signal of expertise (when processed automatically), independent of the source of the disclosure. Thus, we expect that disclosures that come directly from an agent (blogger, advisor etc.) and disclosures that come from another source (third-parties) would have similar effects on trust and persuasion, if the level of elaboration on the disclosure is similar,[8] and if the manner in which the disclosure is given

does not lead consumers to feel that they were deceived by the agent.

14.2. Managerial and policy implications

Our results have several important implications for organizations, managers and policy makers. A potentially troubling finding from our field data was that only a very small fraction of posts from the bloggers in our sample disclosed a COI. While we do not claim that these bloggers did not disclose a COI when they should have disclosed, industry analysts predict that an estimated 93% of online sponsored content violates FTC guidelines for disclosing sponsored content (CBS News, 2017). This is also consistent with our interactions with fashion and beauty bloggers, who informed us that they believe that COI disclosures will damage the trust followers have in them and they would prefer not to disclose their COIs. Further support for the notion that those with COIs avoid disclosure comes from the medical domain: a recent investigation shows that U.S. health-care professionals virtually never disclose their conflicts when offering medical advice on social media (Kaplan, 2016), and although almost all medical and scientific journals require authors to disclose their COIs, many authors do not adhere to this requirement (Goozner, 2004). If disclosure is used as a way to alert people about the presence of COIs, an important step for implementation is to ensure those with COIs indeed disclose.

However, the findings in this paper suggest that when COI disclosure is present, a critical caveat for policy makers and managers is that disclosures in a content-rich environment could end up enhancing trust in, and persuasiveness of, the advisor. This unintended consequence of COI disclosure makes recipients more susceptible to advisors' biases and raises an ethical dilemma for managers: Encouraging COI disclosure could benefit the organization while retaining the appearance of giving relevant and important information to benefit consumers.

Our findings show that explicitly prompting deliberation on the COI disclosure mitigated and sometimes reversed the expertise cue effect. This could be implemented by having recipients sign off that they have read the disclosure, perhaps by clicking on an "agree" button. Some online disclosures already require such consent. However, it remains an open question whether this would be effective as it does not ensure that the disclosure is read, and it may not be fully effective in encouraging deliberate processing.

However, on an optimistic note, two observations suggest that as COI disclosures become more pervasive, the heuristic effect of COI disclosure might disappear over time. First, as advisees become more familiar with COI disclosures, they may require fewer cognitive resources to process their implications and more readily make inferences of potential bias. This is consistent with research showing that individuals who have previously served as a word-of-mouth agent are less likely to be positively influenced by other agents' COI disclosure (Abendroth, 2012). Second, as disclosures become more prevalent, their ability to signal expertise may be minimized and eventually eliminated if the vast majority of advisors disclose COIs.

14.3. Future directions

The specific mechanisms that lead to a positive effect of COI disclosures on trust and persuasion are an important area for future research. Our thesis is that the positive effect of disclosure emerges when participants engage in automatic processing and use the disclosure as a heuristic cue to judge the advisor. However, when participants engage in more effortful, deliberate processing of the meaning of the COI disclosure, perceptions of bias are increased, and disclosure leads to reduced trust and persuasion. Nevertheless, other plausible moderating factors are worthy of future research and reconciliation with our theorizing. For instance, previous research (Abendroth & Heyman, 2013; Abendroth, 2012) suggests that a feeling of being more informed leads to a positive effect of disclosure. Other possible moderators include

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[7] This stream of research also reveals similar levels of trust (for all three dimensions: integrity, benevolence and expertise) in recipients regardless of whether the disclosure is deemed voluntary or mandatary (required by law) (Sah & Feiler, 2018; Sah et al., 2018), which could also suggest that it is the information from the disclosure that is the driving force behind perceptions of the advisors' trustworthiness rather than perceived honesty inferred by the agent's act of disclosing.

[8] Note that third party disclosures are usually received at a different time from the advice, therefore consumers may be more likely to deliberate on the third party disclosures vs. disclosures given directly from an advisor.

whether the recipient has previous experience as a persuasion agent (Abendroth, 2012), whether the agent has a personal relationship with the advisee (Carl, 2008; Tuk et al., 2009), the type of disclosure (Carr & Hayes, 2014), and whether the COI is expected (Sah, 2015). Our own data suggests that trust propensity and gender are possible moderators of the effect. Prior research has documented cultural differences in skepticism (2008; Diehl, Mueller, & Terlutter, 2007), and that men are more cynical than women (Leung, Li, & Zhou, 2012). However, whether these different moderator variables lead to the same underlying construct or to distinct constructs remains to be researched.

Additional exploration of moderator variables and individual differences may also help account for the null results that have been reported in two prior papers in the blogging domain. Hwang and Jeong (2016) found no effect on trust and persuasion of COI disclosure vs. nondisclosure: Possible variables that may have contributed to a null effect are the topic of the post [people trust sponsored recommendations involving experiences, such as vacations, less than recommendations about other products or goods (Lu, Chang, & Chang, 2014)], and recipient's familiarity with the product or service [people trust sponsored recommendations of unfamiliar products or services less than sponsored recommendations of familiar products or service (Lu et al., 2014)].

The second paper that reported a null effect between their central conditions of no disclosure versus COI disclosure on blogger credibility and persuasion is by Carr and Hayes (2014). In this paper, the disclosure statement was longer and more complex than the disclosures used in our studies. Furthermore, neither Hwang and Jeong (2016), nor Carr and Hayes (2014), appear to familiarize readers with the blogger who wrote the post, which may be an important factor to observe positive effects of disclosure on source credibility and persuasiveness. In sum, as our theory posits, the specific outcome of COI disclosures depends on the level of elaboration that receivers engage in. Under certain circumstances, COI disclosures can lead to an expertise cue and increased assessments of the blogger's credibility and persuasiveness. However, we acknowledge that the outcome may be influenced by other characteristics of the blog, blogger and reader.

Remarkably, explicitly calling out that a payment was received by the blogger had no effect on participants compared to more implicit disclosures (Study 4). A material connection between the blogger and a sponsoring organization is an essential part of the COI in the context we study. However, the mere act of being paid may be an important variable that increases perceptions of expertise. Although perceptions of expertise have been shown to mediate the effect of other types of disclosures that do not involve direct payment (e.g., specialty bias disclosures) on persuasion (Sah et al., 2016), disclosure of payment alone (without a COI) may also lead to increased perceptions of expertise. What is interesting in the context we study is that people who automatically process the blogger's COI disclosure do not appear to account for the fact that the payment creates a COI, which may distort the blogger's review of the product or brand. This is supported by our participants' perceptions of bias. Perceptions of bias increase when participants deliberate on the disclosure and our model suggests that perceived bias mediates the effect of disclosure on source credibility and persuasiveness. Nevertheless, an interesting avenue of research is to investigate if inferences differ with COI disclosures versus non-COI disclosures of paid endorsements, or whether any type of sponsorship or payment by a commercial organization in the blogging domain (for example, sponsorship from independent third-parties) is viewed as a COI by readers who deliberate on the disclosure.

14.4. Conclusion

This paper adds to a growing body of literature demonstrating potential unintended consequences of conflict of interest disclosure. Disclosures, at least when processed automatically, can lead to greater trust in the advisor's expertise, and thus enhance persuasion; an effect

we refer to as disclosure's *expertise cue*. This effect is mitigated and sometimes reversed when recipients are asked to deliberate on the meaning of conflict of interest disclosure and for high need-for-cognition recipients who are more likely to spontaneously deliberate on the disclosure.

Acknowledgments

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.obhdp.2018.05.008.

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