

Eliciting the truth, the whole truth, and nothing but the truth: The effect of question phrasing on deception

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ABSTRACT

In strategic information exchanges (such as negotiations and job interviews), different question formulations communicate information about the question asker, and systematically influence the veracity of responses. We demonstrate this function of questions by contrasting *Negative Assumption* questions that presuppose a problem, *Positive Assumption* questions that presuppose the absence of a problem, and *General* questions that do not reference a problem. In Study 1, Negative Assumption questions promoted greater disclosure of undesirable work-related behaviors than Positive Assumption or General questions did. In Study 2, Negative Assumption questions increased disclosure of undesirable information in face-to-face job recruitment meetings, relative to Positive Assumption questions and General questions. Study 3 demonstrated that the relationship we identify between question type and the veracity of responses is driven by inferences of assertiveness and knowledgeability about the question asker. Finally, in Study 4, asking assertive questions with regard to uncommon behaviors led the question asker to be evaluated more negatively.

1. Introduction

Imagine finding your dream apartment. Before signing the lease, you ask the landlord: “How are the neighbors?” “Oh, they’re great!” comes the reply. You soon learn that “great” includes wild parties, undisciplined children, and a barking dog. As you listen to the loud music blaring from your neighbors’ apartment, you wonder what you might have done differently. After all, you *did ask* about the neighbors.

In the present research, we investigate the effect of different question types on truthful information disclosure. We theorize that in addition to serving as vehicles for soliciting information, questions reveal information about the question asker that influences disclosure. We introduce and test our theoretical framework across four experiments involving *strategic information exchanges* in which individuals are motivated to withhold private information.

Deception is a pervasive challenge in strategic information exchanges ranging from negotiations, to job interviews, to consumer purchases, to international diplomacy (Barry & Rehel, 2014; Donahue, Lewicki, & Robert, 2000). These interactions are characterized by information asymmetry and information dependence (Akerlof, 1970; Gino & Moore, 2008; Lewicki & Stark, 1996). In these settings,

individuals have access to privileged information that would enable their counterparts to make informed decisions (Lewicki & Robinson, 1998).

Within these interactions, individuals often have both the opportunity and the incentive to deceive others to promote their self-interest (Boles, Croson, & Murnighan, 2000; Olekalns & Smith, 2007; Steinel & De Dreu, 2004; Zhong, 2011). That is, self-serving lies advantage the deceiver at the expense of the target (Gneezy, 2005; Levine & Schweitzer, 2014; Yip & Schweitzer, 2016; Zhong, Ku, Lount, & Murnighan, 2006). Such self-serving deception can take different forms, including active misrepresentations (Gneezy, 2005; Levine & Schweitzer, 2014; Steinel, 2015), intentional omissions (Bok, 2011; Gaspar & Schweitzer, 2013; John, Barasz, & Norton, 2016; Olekalns & Smith, 2009), and the use of truthful statements to create a misleading impression (Rogers, Zeckhauser, Gino, Schweitzer, & Norton, 2014). For example, a job candidate might mischaracterize her past experience, a car seller might fail to report known damage, or a negotiator might misrepresent the value of a competing offer. Thus, in strategic information exchanges such as negotiations, the information exchange process is both critical (Thompson, 1991) and often frustrated by the prevalence of deception (Bazerman, Curhan, Moore, & Valley, 2000;

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Gino, 2015; Zhong, 2011).

The existing negotiations literature has considered a number of interpersonal antecedents of deception, such as power (Koning, Steinel, Van Beest, & Van Dijk, 2011; Pitesa & Thau, 2013), emotion (Moran & Schweitzer, 2008; Van Dijk, Van Kleef, Steinel, & Van Beest, 2008; Wang, Northcraft, & Van Kleef, 2012), competition (Schweitzer, DeChurch, & Gibson, 2005), and trust (Lount, Zhong, Sivanathan, & Murnighan, 2008; Yip & Schweitzer, 2015). However, surprisingly little research has investigated how characteristics of the conversation influence the use of deception in negotiation settings. And although scholars have enthusiastically encouraged negotiators to ask questions (e.g., Malhotra & Bazerman, 2007; Nierenberg, 1986; Shell, 2006; Thompson, 2014), no prior work has experimentally tested the relative effectiveness of different types of questions in eliciting honest disclosure in negotiations, or proposed a coherent theory to predict why some questions may be more effective than others.

Reflecting this lack of experimental evidence, the advice offered in the literature is often vague and contradictory. For example, Schweitzer and Croson (1999, p. 244) argue that “negotiators should increase the number of direct questions they ask” to curtail their risk of being deceived. In contrast, Malhotra and Bazerman (2007, p. 40) encourage negotiators to “ask questions that are less direct—and less threatening.” Taken together, prior work suggests that asking questions in negotiations is important, but offers little in terms of concrete guidance (Miles, 2013).

In our investigation, we develop a theoretical framework, use this framework to identify distinct question types, and contrast the effectiveness of these different types of questions for eliciting honest disclosures in strategic information exchanges in which respondents are motivated to withhold unfavorable facts. We experimentally test whether different types of questions lead to different levels of disclosure, and demonstrate that variance in disclosures can be explained by respondents making different inferences about the question-asker, based on the type of question that was asked. We propose a novel framework that conceptualizes questions as speech acts that not only *solicit* information from the respondent, but also *reveal* information about the asker.

1.1. The functions of questions

Linguists have long recognized that questions fulfill a number of conversational functions (Clark, 1996). Some of these functions are structural. For example, the question: “And what happened next?” moves the narrative forward, and the question: “Do you know what I mean?” pauses the narrative to ensure understanding. The most fundamental function of questions, according to linguistics, is to elicit information (e.g., Loos, Anderson, Day, Jordan, & Wingate, 2004).

Across disciplines, however, scholars have noted that subtle changes in question phrasing affect the content of the replies. According to Grice (1989), different questions communicate the desired topic and level of detail of a reply by invoking conversational norms. The question: “How are the neighbors?” invokes norms that guide the conversation to general information about the neighbors, without dictating revelation of specific aspects of the neighbors’ behavior, either negative or positive.

Related work in psychology has shown that the phrasing of questions can convey information that guides responses (Loftus & Palmer, 1974; Loftus & Zanni, 1975; Loftus, 1975; Smith & Ellsworth, 1987). For example, Loftus and Palmer (1974) found that participants who were asked to estimate the speed of two cars in a video that “smashed” into each other provided higher estimates than participants who were asked to estimate the speed of two cars that “bumped” into each other. This body of research also found that questions could guide participants to recall objects and events that they had never actually observed if the researcher’s question presupposed these objects and events (Loftus, 1975; Smith & Ellsworth, 1987). For example, Loftus (1975) found

that significantly more participants who were asked “How fast was the white sports car going when it passed the barn while traveling along the country road?” directly after viewing a video tape recalled seeing a barn (that did not actually exist) one week later than participants who were asked “How fast was the white sports car going while traveling along the country road?”

More recent research has found that questions can communicate information about how appropriate the question askers consider particular behaviors to be. This research has found that slight differences in phrasing of similarly structured questions influence respondents’ perceptions of how normative a potentially risky, unethical or socially undesirable behavior is (DiFranceisco, McAuliffe, & Sikkema, 1998; John, Acquisti, & Loewenstein, 2011; Raghuram & Menon, 1996; Williams, Block, & Fitzsimons, 2006).

In fact, scholarly work across a number of disciplines, including linguistics, sociology, psychology, political science, public health, and criminology, suggests that question phrasing may influence responses and behavior by communicating information about the question asker’s assumptions, knowledge, intentions, and expectations (Belli, Moore & Vanhoewyk, 2006; Belli, Traugott, Young & McGonagle, 1999; Catania, Binson, Canchola, Pollack, & Coates, 2017; Holtgraves, Eck, & Lasky, 1997; Jochen & Valkenburg, 2011; Näher & Krumpal, 2012; Presser, 1990; Waisman-manor & Sarid, 2017). These findings, however, lack a coherent theoretical framework and have surveyed a wide variety of question types without an organizing structure.

In the present research, we build on this extant literature to study questions in strategic information exchanges, contexts in which one party is motivated to withhold the truth. We create a framework and show that different types of questions systematically communicate information about the question asker’s assumptions and expectations that influence the veracity of responses. Specifically, we consider two types of assumptions question askers are likely to make in strategic information exchanges—the assumption that a particular problem does not exist, which we term “positive assumption” questions, and the assumption that the a particular problem does exist, which we term “negative assumption” questions. For example, the positive assumption question, “The neighbors are quiet, right?” solicits information about the neighbors’ noise levels, but implicitly assumes that noise is not a problem. In contrast, the negative assumption question, “How noisy are the neighbors?” solicits information about the same subject, but implicitly assumes that the neighbors are noisy. We contrast the positive and negative assumption questions to general questions that do not make an implicit assumption, such as “How are the neighbors?”

We postulate that individuals routinely, but perhaps unwittingly, use questions to make inferences about the knowledge and intentions of the question asker, ultimately affecting the veracity of their responses. When asked a positive assumption question, such as “The neighbors are quiet, right?” respondents may infer that the question asker has some relevant information, but is unlikely to pursue an assertive line of questioning. Conversely, when asked a negative assumption question, “How noisy are the neighbors?” respondents may infer that the question asker both has relevant information and is likely to pursue an assertive line of questioning. As a result, negative assumption questions are most likely to elicit truthful disclosure about an underlying problem related to noisy neighbors. Finally, both negative and positive assumption questions are likely to elicit greater information disclosure than general questions, because respondents are unlikely to infer from general questions that the question asker either has relevant information or is likely to pursue an assertive line of inquiry.

1.2. Questions and deception

Our research contributes to both the negotiation literature and the broader body of research on deception by providing a framework for why different types of questions might lead to different patterns of disclosure. Although fields like sociology have considered related

concerns (e.g. promoting greater disclosure of socially-sensitive information in interviews), this work is typically concerned with structural aspects of the interview (e.g., open- versus closed-ended questions, or using self-administered versus personal interviewing; Tourangeau & Smith, 1996) rather than the content of the questions themselves.

Relatedly, work in criminology has addressed the use of open versus closed questions (Lamb et al., 1996; Myklebust & Bjørklund, 2006; Sternberg et al., 1996), direct versus indirect questions (Korkman, Santtila, & Sandnabba, 2006), short versus long questions (Korkman, Santtila, Westeråker, & Sandnabba, 2008) and the use of (mis)leading questions (Aidridge & Cameron, 1999) in gathering comprehensive and detailed witness accounts. However, a significant portion of this work concerns itself not with minimizing deception, but rather with minimizing acquiescence to interviewer questions (Poole & Lindsay, 1998).

Other work in sociology has explored how “normalizing” socially undesirable behaviors by using supportive (Catania et al., 2017) or forgiving (Holtgraves et al., 1997; Jochen & Valkenburg, 2011; Näher & Krumpal, 2012) phrasing might change disclosure, but this work generates conflicting results such that some interventions increase and others decrease disclosure. Related work in political science has investigated altering question wording to normalize admitting one’s failure to vote or altering question format to allow respondents to “save-face,” but again, these studies fail to find consistent results (Belli et al., 1999, 2006; Belli, Traugott, & Rosenstone, 1994; Presser, 1990; Waismel-manor & Sarid, 2017). Thus, although both of these bodies of research are built on psychological theories that predict that question phrasing can create a safe space to promote admission of socially undesirable behaviors, the empirical evidence does not seem to consistently support such theorizing.

Across the existing literature, only a few papers attempt to connect disclosure to inferences that respondents might make about the question asker as a result of how a particular question is asked. For example, in the context of voter over-reporting, Hanmer, Banks, and White (2013) tested whether threatening respondents with the verification of their answers would lead to greater disclosure. Participants who thought their answers would be verified revealed more failures to vote, suggesting that when individuals infer that the question asker will be knowledgeable enough to detect a lie, they are more likely to respond truthfully.

In examining perceptions regarding privacy, John et al. (2011) manipulated privacy concerns by asking about the frequency of performing an unethical behavior directly, versus asking two questions about the ethicality of performing a particular behavior and then inferring whether the behavior was *actually* performed based on which question the participant chose to answer. John et al. (2011) found that asking a single question that directly addressed the unethical behavior decreased disclosure and increased privacy concern.

Finally, in the most relevant negotiation paper on this topic, Schweitzer and Croson (1999) conducted a series of scenario studies and found that targets are less likely to lie by omission but more likely to lie by commission when imagining being asked direct questions rather than not asked a question at all. However, because this research compared asking a direct question to a “no questions” condition, it does not speak to our theory regarding the inferences people make about different types of questions.

In sum, although some work has engaged with the topic of questions and disclosure, very little work has investigated whether different question wording can reliably alter the truthfulness of the responses. The papers that have come closest offer contradictory results, in part because they simultaneously manipulate a variety of question-related and contextual features. We address this gap in the literature, and postulate that questions serve an additional role that prior scholars have not considered. Specifically, we hypothesize that in addition to soliciting information, different types of questions *reveal* different information about the asker, and that respondents then use questions as a

source of information about askers to guide their responses.

1.3. Question types and respondent inferences

We build our theorizing on prior work that has examined the interpersonal effects of communication on social perception. Social perception involves a process of making inferences about targets’ dispositions and attributes in order to predict future behavior (Asch, 1946; Cuddy, Fiske, & Glick, 2008; Morris, Menon, & Ames, 2001). Individuals are highly motivated to form accurate social perceptions because these perceptions enable them to navigate their social world (Galinsky & Schweitzer, 2015; Galinsky, Magee, Inesi, & Gruenfeld, 2006).

To form inferences about counterparts, negotiators rely on both verbal and nonverbal cues (Adam & Brett, 2015; Van Kleef, 2009). For example, verbal cues, such as numerical precision (Mason, Lee, Wiley, & Ames, 2013), can signal knowledge. Related work has found that the use of ranges when making an offer in a negotiation can signal politeness (Ames & Mason, 2015), and that the use of apologies can signal trustworthiness (Kim, Dirks, & Cooper, 2009; Schweitzer, Hershey, & Bradlow, 2006).

Several studies have also linked non-verbal expressions with important inferences. For example, when individuals perceive angry expressions or receive aggressive messages, they strategically infer that their counterparts are tough (Van Kleef, De Dreu, & Manstead, 2004), selfish (Yip & Schweinsberg, 2017), dominant (Knutson, 1996), competitive (Yip, Schweitzer, & Nurmohamed, 2018), or competent (Brescoll & Uhlmann, 2008). In contrast, individuals make very different inferences when their counterparts express happiness (Barasch, Levine, & Schweitzer, 2016) or gratitude (Yip, Lee, Chan, & Brooks, 2018).

In this paper, we focus on two types of inferences people can make from question phrasing that are particularly consequential for deception. First, we argue that questions enable respondents to infer that the asker has more or less relevant knowledge. Second, we argue that questions signal how assertive the question asker is. Although there are a host of other question types that can be considered (e.g., rhetorical questions, hypothetical questions, or trick questions), we focus on three question types that vary with regard to the specificity of their inquiry and the information they presume, and which we accordingly theorize vary with respect to the inferences respondents make regarding the asker’s knowledge and assertiveness: *General* questions, *Positive Assumption* questions, and *Negative Assumption* questions. We expect these different types of questions to influence response honesty when respondents are motivated by self-interest to conceal information.

General questions pose a broad inquiry about a situation, a good, or a service (e.g. “How is the project going?”). General questions lack a specific line of investigation and may convey the impression that the asker lacks specific knowledge about the topic of discussion. Furthermore, General questions may convey the impression that the asker is not assertive in their effort to uncover information. Respondents may conclude that they have broad latitude in answering the question because the asker is unknowledgeable and unassertive, and thus unlikely to detect deception or challenge their claims.

Positive Assumption questions ask about a specific issue, but communicate the assumption that no problems exist (e.g. “The project is not likely to run over budget, is it?”). These questions reveal an awareness of a possible issue, coupled with an aversion to pursuing an assertive line of questioning. In contrast to General questions, Positive Assumption questions signal that the asker is more knowledgeable, but still averse to confrontation, and hence unlikely to challenge the question respondent or persist in their pursuit of information.

Negative Assumption questions ask about a specific issue, and communicate an implicit assumption that a problem exists (e.g. “How much over budget is this project likely to run?”). In contrast to General and Positive Assumption questions, Negative Assumption questions

communicate the asker's knowledge of potential problems and comfort with pursuing an assertive line of questioning, even at the cost of potential interpersonal discomfort.

Negative Assumption questions are characterized by their assertiveness, which the literature has defined as the extent to which people vocalize and protect their interests (Ames & Wazlawek, 2014). Thus, we extend prior work that has demonstrated that impressions of assertiveness are more likely to trigger compliant behaviors on the part of perceivers, such as acceptance of first offers (Galinsky & Mussweiler, 2001), greater concessions (Van Kleef et al., 2004), and more attentiveness (Ames, 2009). Here, we examine whether the assertiveness conveyed by Negative Assumption questions facilitates a specific compliance behavior: honest disclosure.

Our key prediction is that because question-respondents will draw different inferences about the question-asker based upon the type of question they are asked, they will provide different information in their replies. Specifically, prior research shows that if individuals are motivated to deceive, they can withhold unfavorable information and/or actively misinform their counterparts (Levine & Schweitzer, 2014; Loewenstein, Cain, & Sah, 2011; Rogers & Norton, 2011; Wang, Zhong, & Murnighan, 2014). We predict that questions that lead to inferences of greater knowledge and assertiveness will lead respondents to reveal more unfavorable information. By contrast, questions that lead to inferences of lesser knowledge and assertiveness will lead respondents to include more self-serving and irrelevant information.

We investigate the relationship between questions and disclosure across four studies. In Study 1, we compare disclosure regarding work-related behavior. In Study 2, we extend our investigation to a hiring context, and use face-to-face conversations. We explore how questions asked by job candidates influence disclosure by managers who are incentivized to present their company in a positive light. In Study 3, we identify the underlying mechanism of how questions influence disclosure in a negotiation setting. Specifically, we investigate how questions influence inferences of knowledge and assertiveness, and how these inferences mediate the relationships between question type and disclosure. Finally, in Study 4 we examine the potential interpersonal costs of different question types. We find that assertive questioning with regard to an especially infrequent behavior can lead to less positive interpersonal evaluations.

2. Study 1

In Study 1, we establish the link between question type and disclosure of undesirable behavior. Prior research has found that merely asking about intentions to engage in sensitive behaviors can increase the likelihood that people report having engaged in those behaviors (Fitzsimons, Nunes, & Williams, 2007; Williams et al., 2006). In this study, we build on this work and demonstrate that different question types differentially influence disclosure.

2.1. Study 1: Method

2.1.1. Participants

We recruited 900 participants (48% Female, $M_{\text{age}} = 37$) via Amazon Mechanical Turk (mTurk) who lived in the U.S. and had an approval rating of at least 95% for their work on prior surveys. We paid participants \$0.25 to participate in a two-minute study.

2.1.2. Design

Participants answered questions via an online survey, which required them to imagine that they were interviewing for an internship at the U.S. Department of Energy. We asked each participant about a single potentially sensitive target behavior. In order to avoid stimulus sampling concerns, we used three potential behaviors that we varied between-subjects (using a sick day when not actually sick, gossiping about a coworker, or using work time for personal email or social

media). Based on prior research, we expected many participants to be reluctant to answer these questions honestly (Acquisti, John, & Loewenstein, 2012; Himmelfarb & Lickteig, 1982; John et al., 2011). We also randomly assigned respondents to one of three question-phrasing conditions: Negative Assumption, Positive Assumption, or General question. Thus, we employed a 3 (Target Behavior: Sick Day Use, Gossip, Personal Email) $\times$ 3 (Question Type: Negative, Positive, General) between-participants research design.

For each online study, we targeted 100 participants per condition. Thus, for the 9 conditions featured in the 3 $\times$ 3 design of Study 1, we recruited 900 participants.

2.1.3. Procedure

We asked participants to think about the job they currently have or held most recently. We then asked them one of the three questions about one of the three target behaviors: using a sick day when not actually sick, gossiping about a coworker, and using work time for personal email or social media. We instructed participants to write a response (minimum of 20 characters) in the text box below the question.

In the Negative Assumption condition, participants answered a question that presumed the occurrence of the behavior. Thus, in the Negative Assumption-work time condition, we asked participants, "In a typical week, you occasionally use work time for personal email or social media, right?"

In the Positive Assumption condition, participants answered a question that presumed the behavior had not occurred. Thus, in the Positive Assumption-work time condition, we asked participants, "In a typical week, you don't occasionally use work time for personal email or social media, right?"

In the General condition, participants answered a question that did not specify the target behavior. In the General-work time condition, we asked, "What can you tell us about your use of work time in a typical week?" (We provide the exact phrasings of each question we used in Appendix A).

We hired three research assistants to code participants' typed responses to the questions. Coders used a binary coding scheme, identifying a response as "1" if it did admit to the target behavior (e.g., using work time for personal email or social media), and as "0" otherwise. Inter-rater reliability was strong ($\alpha = 0.96$), and in the case of disagreements we used majority rule. In this study, as in the subsequent studies, we report how we determined our sample size, all of our measures, and any exclusions.

2.2. Study 1: Results

We found a significant main effect of type of question on disclosure, $\chi^2(2) = 91.98, p < .001, \phi = 0.320$. Specifically, fewer participants in the General question condition (0%) disclosed engaging in the target behaviors than did participants in the Positive Assumption condition (18.8%), $\chi^2(1) = 61.74, p < .001, \phi = 0.321$. Similarly, those in the General question condition (0%) were less likely to disclose engaging in these behaviors than those in the Negative Assumption condition (28.0%), $\chi^2(1) = 96.78, p < .001, \phi = 0.403$. Finally, there was a significant difference in disclosure rates between Positive and Negative Assumption question conditions, $\chi^2(1) = 7.10, p = .008, \phi = 0.109$.

When we analyzed each question topic separately, we found the same general patterns of results for questions about workplace attendance¹ and about use of work time (all pairwise comparisons $p < 0.01$). Only for questions about gossip did we observe a pairwise comparison that was not statistically significant. Although there was a

¹ We found that 16 of the 900 participants indicated that they took sick days to take care of sick family members as non-disclosures (as this would be an acceptable use of sick days from the perspective of many employers), but our patterns of results are the same if these responses are removed from analyses.

significant overall difference among the conditions in likelihood of disclosing that one had gossiped about a coworker, $\chi^2(2) = 42.37$, $p < .001$, $\phi = 0.376$, the difference in disclosure rates between Positive and Negative Assumption question conditions was not significant, $\chi^2(1) = 0.003$, $p = .96$.

2.3. Study 1: Discussion

Our findings in Study 1 reveal that question phrasing impacts the disclosure of sensitive behaviors. Specifically, participants who were asked Negative Assumption questions that presumed that they had engaged in the behavior (“You have [engaged in an undesirable behavior] ..., right?”) admitted that they had engaged in that behavior more frequently than did participants who were asked Positive Assumption questions that tacitly presumed they had not engaged in the behavior (“You haven’t [engaged in an undesirable behavior]... right?”). Furthermore, both Negative Assumption and Positive Assumption questions elicited disclosures about sensitive behaviors. General questions, however, failed to elicit any disclosures about the target behavior.

Notably, we obtained these results in an online context, in which participants had little reason to worry about the negative consequences of disclosure. It is possible that these differences may be even larger in strategic information exchanges in which disclosing negative information may adversely affect one’s outcomes.

Importantly, our findings deepen our understanding of conversational norms (Grice, 1989). Both Positive Assumption and Negative Assumption questions refer to specific behaviors and use parallel sentence structures which, according to Gricean conversational norms, should yield similar rates of disclosure. Our Study 1 findings, however, reveal that question phrasing elicits different responses. Prior research has shown that the provision of information about social norms influences admission of sensitive personal information (Acquisti et al., 2012). To the extent that Positive Assumption questions may have communicated that the question asker believes that engaging in the target behavior is counter-normative, admission rates may have decreased.

In Studies 2 and 3, we investigate the influence of different question types in interpersonal settings in which participants are explicitly motivated to conceal negative information. We expand our investigation to include interactions between participants and conversation partners under incentivized conditions, and we explore the underlying psychological mechanisms that drive these effects.

3. Study 2

In Study 2, we extend our investigation in two ways. First, we engage participants in incentivized face-to-face interactions. Second, we provide participants with concrete information to inform their replies. This approach enables us to compare the information they reveal with the information they actually have.

In this investigation, we matched each participant with a trained confederate to complete a mock job recruitment meeting, and we captured the content of these face-to-face meetings through audio recordings of the conversation. In this job recruitment setting, the question-recipient (hiring manager) is explicitly incentivized to make a good impression on the question-asker (job candidate). This situation reflects the frequent conflict between making an honest disclosure that reveals unfavorable information versus concealing the relevant, damaging information. In addition, this face-to-face setting affords a rich context for testing the impact of question phrasing.

3.1. Study 2: Method

3.1.1. Participants

We recruited 101 individuals (61% Female) at a large East Coast U.S. business school to participate in a 30-minute “job interview” study for a \$5 show-up fee. No participants indicated suspicion about the

cover story used in this study, and we included all participant responses in our analyses.

3.1.2. Design

We paired each participant with a confederate, and instructed each dyad to prepare for a mock job recruitment meeting. We assigned every participant to the role of “Hiring Manager” and randomized them into one of three conditions: General question, Positive Assumption question, or Negative Assumption question. Across conditions, the confederate (who was blind to the experimental hypothesis) asked the participant a General, a Positive Assumption, or a Negative Assumption question. Because the logistical constraints of conducting face-to-face meetings between a participant and a confederate restricted our ability to recruit participants, we targeted 100 participants for Study 2 (approximately 33 per condition). We ultimately finished with 101 participants because sessions were conducted in batches of two to five participants at a time.

3.1.3. Procedure

Participants and confederates (who posed as participants) arrived to a large meeting room. Each session consisted of two to five participants and the same number of confederates. We announced that the participants would engage in a simulation involving a job candidate and a hiring manager. We informed everyone that the job candidate had received offers from three competing consulting firms, and now has a follow-up meeting with the hiring manager from one of those firms. We also informed participants and confederates that some of them would be assigned to the role of Candidate and others to the role of Hiring Manager. After reading background material, the Candidate and Manager would meet to resolve any questions about the job offer, after which the candidate would decide whether or not to accept the offer.

In reality, we assigned all participants to the role of “Hiring Manager” and had them interact with confederates who we assigned to the role of “Candidate.” Participants learned that in addition to the \$5 payment for the 30-minute-long session, they would receive a bonus of \$1 if the Candidate accepted the job offer from their company.

Prior to meeting the Candidate, participants read information about their company and the job offer that had been made to the Candidate (see Appendix B). The job was an entry-level management consulting position that featured a generous salary, a substantial insurance plan, and attractive tuition reimbursement benefits. However, participants also learned that the corporate culture at the company was highly competitive and junior staff frequently complained of feeling abused. In fact, junior staff had even filed a lawsuit against the firm. Participants also learned that since the lawsuit had been filed, the rate of employee complaints had remained high, and that the company had only made minor morale improvement efforts (e.g., “Casual Jeans Fridays” during the summer).

After spending five minutes reviewing the information relevant to their role, the experimenter paired each participant with a confederate and escorted the pair to an individual meeting room. We asked the Hiring Managers (participants) to begin the meeting by restating the fundamentals of the position (e.g., title and salary), and then inviting the Candidate to ask any questions they might have about the position. The Candidates (confederates) asked one initial question followed by the manipulation (a General, Positive Assumption, or Negative Assumption question). The initial question dealt with the benefits package available at the company (“Any other benefits I should know about?”). The next question, which served as our manipulation, focused on the corporate culture.

The question the confederates asked varied across conditions. In all conditions, this question began, “I understand consulting firms can have very competitive cultures and you guys have had some trouble in the past...” However, the General question concluded with: “...what can you tell me about the current culture of this company?” The Positive Assumption question concluded with: “...but your HR hasn’t received any major complaints since that lawsuit from a couple years ago, right?” Finally,

Table 1
Descriptive statistics for participant survey. Means and standard errors (Study 2).

	General	Positive assumption	Negative assumption	Test statistic
Candidate quality	2.88 (0.11)	2.73 (0.11)	2.86 (0.10)	$F(2,98) = 0.60, p = .550$
Confidence that candidate would accept offer	2.67 (0.14)	2.58 (0.14)	2.80 (0.14)	$F(2,98) = 0.65, p = .522$
Own honesty during meeting	3.58 (0.13)	3.39 (0.13)	3.74 (0.12)	$F(2,98) = 1.93, p = .151$
Misrepresented company in answers	0.55 (0.11)	0.52 (0.11)	0.31 (0.11)	$F(2,98) = 1.33, p = .270$

the Negative Assumption question concluded with: “...how many major complaints has your HR received since that lawsuit from a couple years ago?” Following the response to this question, the confederates asked two remaining scripted questions.

Participants and confederates concluded the meeting after the Candidates (confederates) had asked the scripted questions and the manipulation question, and the participant indicated that they had no new information to add. The meetings were all audio-recorded with participants’ consent. At the end of the meeting, both participants and confederates completed a final survey, and we then debriefed and paid participants. All participants received the \$5 show-up fee plus the \$1 bonus.

3.2. Dependent variables

3.2.1. Survey responses

In the post-interview survey, participants answered four questions regarding their impressions of the Candidate and the meeting using 5-point Likert scales. Specifically, participants rated the quality of the Candidate, their confidence that the Candidate would accept the offer, their own honesty during the meeting, and the extent to which they misrepresented the company in their answers. We report summary statistics of the survey responses in Table 1.

Participants also provided demographic information, and completed a seven-question quiz to test their recall of the information from their information packet.

3.2.2. Transcript coding

In addition to collecting survey responses, we also transcribed the recorded responses participants gave to our target question. We hired research assistants to code typed transcripts of the section of the meeting in which the participant responded to the target question. The text of the target question was not included in these transcripts, keeping coders blind to experimental condition for each response. However, to ensure that coders could properly interpret responses, they received the same “hiring manager information sheet” that was given to participants.

The primary goal of transcribing and coding these responses was to evaluate how the question affected participant (Hiring Manager) disclosure of employee complaints. To this end, one set of three coders recorded whether participants acknowledged the presence of complaints since the lawsuit ($\alpha = 0.96$). Another set of three independent coders recorded whether participants mentioned a series of additional positive features (i.e., reduced travel to client sites, free coffee, “Casual Jeans Fridays”), negative features (i.e., long work hours, personal criticism from co-workers, forced ranking system for promotions, previous lawsuit), and possible solutions (i.e., creation of a complaint tracking system, creation of a morale task force; all $\alpha s > 0.73$). For all measures, we used majority rule to settle any disagreements among the coders.

3.3. Study 2: Results

3.3.1. Information disclosure

Overall, we find that participants were most forthcoming when they were asked a Negative Assumption question, and were least forthcoming when asked a General question. Specifically, participants were

more likely to reveal the presence of complaints in response to Negative Assumption rather than Positive Assumption questions. They were least likely to disclose negative information in response to a General question. By contrast, participants provided more positive and/or irrelevant information in response to General and Positive Assumption questions than in response to the Negative Assumption question.

3.3.1.1. Disclosure of negative information. Consistent with our theorizing, participant responses to the target question differed in the frequency with which they addressed employee complaints about the company culture, $\chi^2(2) = 55.38, p < .001, \phi = 0.741$. Participants were less likely to acknowledge the presence of complaints when asked a General question (12.1%) than when asked a Negative Assumption question (100%), $\chi^2(1) = 53.63, p < .001, \phi = 0.888$. Furthermore, recipients of Positive Assumption questions (39.4%) were less likely to acknowledge the presence of complaints than were those asked a Negative Assumption question, $\chi^2(1) = 30.05, p < .001, \phi = 0.665$ (comparing General and Positive Assumption question conditions, $\chi^2(1) = 6.42, p = .011, \phi = 0.312$).

3.3.1.2. Disclosure of positive information. We found no significant differences across conditions in the likelihood of mentioning the morale task force (General: 18.2%, Positive Assumption: 21.2%, Negative Assumption: 20%), $\chi^2(2) = 0.10, p = .953$, but there were significant differences in the likelihood of discussing the complaint tracking system, $\chi^2(2) = 6.40, p = .041, \phi = 0.252$. Specifically, those asked a General question (72.7%) were more likely to mention the tracking system than were those in the Negative Assumption condition (45.7%), $\chi^2(1) = 5.12, p = .024, \phi = 0.274$. Similarly, those asked a Positive Assumption question (69.7%) mentioned the tracking system more often than those in the Negative Assumption condition (45.7%), $\chi^2(1) = 3.99, p = .046, \phi = 0.242$. There was no difference between the General (72.7%) and Positive Assumption (69.7%) question conditions, $\chi^2(1) = 0.07, p = .786$.

Finally, we investigated the extent to which participants discussed three purely positive pieces of information that were mentioned in the hiring manager information sheet: implementation of “Casual Jeans Fridays,” reduction of travel to client sites, and free coffee in the lobby between 6:00 am and 8:30 am. We found that participants mentioned a significantly greater number of positive attributes when asked a General question ($M = 1.94, SD = 1.17$) than when asked a Positive Assumption ($M = 1.03, SD = 1.15$) or a Negative Assumption question ($M = 0.66, SD = 1.14$), $F(2, 97) = 11.03, p < .001$.² We present the relative frequency of different company features, as recorded by research assistants when coding the transcripts of the responses to the target questions, in Fig. 1.

3.3.2. Participants’ evaluations of the question-asker

An important consideration for individuals seeking to prevent deception by asking assertive questions, such as our Negative Assumption question, is whether this approach may change the tone of the conversation and adversely impact perceptions of the question asker. To

² The loss of one degree of freedom reflects the fact that one of the participants did not mention any features listed in the experimental materials, but rather compared the company to the university where the study was conducted.

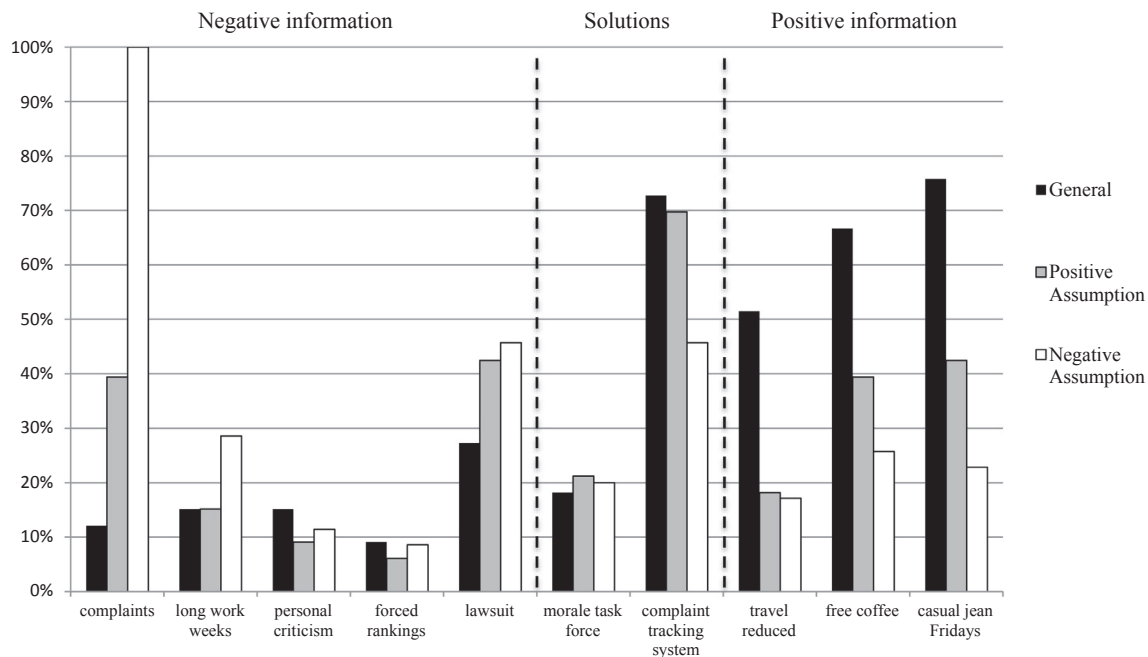


Fig. 1. Frequency of company features mentioned by condition (Study 2; transcript coding).

investigate this possibility, we analyzed participants' perceptions of the confederate's quality as a job candidate across conditions. Overall, we did not find evidence of a penalty for asking a Negative Assumption question; rather, participants judged the question asker similarly regardless of the type of target question.

Specifically, we found that participants did not differ in their evaluations of the quality of the confederate candidates across conditions, $F(2, 98) = 0.60, p = .550$, nor did they express different levels of confidence in their belief that the job offer would be accepted, $F(2, 98) = 0.65, p = .522$. Participants' ratings of their own honesty also did not significantly differ across conditions, $F(2, 98) = 1.93, p = .151$, nor did their perceptions of the extent to which they misrepresented their company, $F(2, 98) = 1.33, p = .270$. That is, even though different question types elicited different rates of disclosure, participants did not change their evaluations of the candidate's quality, their predictions of the candidate's eventual decision, or their own honesty, based on the question asked.

3.4. Study 2: Discussion

Study 2 demonstrates that question types differ in both the extent to which they elicit disclosure of sensitive negative information, as well as the extent to which they promote discussion of positive information. Whereas Negative Assumption questions elicited more truthful negative information about the company, General questions elicited more positive information, some of which was irrelevant to the key issue. Across both measures, Positive Assumption questions fell in the middle, eliciting less truthful negative information than Negative Assumption questions (but more than General questions), and eliciting less positive or irrelevant information than General questions (but more than Negative Assumption questions).

Though both Negative and Positive Assumption questions evoked mentions of complaints regarding the company culture, Negative Assumption questions were the most effective in prompting participants to acknowledge and discuss this problem. The Positive Assumption question guided a substantial number of participants to acknowledge the presence of complaints, but this disclosure was often softened by describing the new complaint tracking system. Finally, General questions elicited the least information about complaints, but the most

information about unrelated content, including both meaningful solutions as well as relatively trivial programs such as "Casual Jeans Fridays." Importantly, participants rated confederate Candidates as equally qualified for the job across all three experimental conditions, suggesting that there was no penalty for asking an assertive (Negative Assumption) question in this setting.

We conducted this study using face-to-face interactions in an incentivized context, in which participants were motivated to make a positive impression on their confederate partners. We evaluated responses to our questions in two ways—by the participants themselves in a post-conversation survey, and by coders who analyzed typed transcripts of the conversations. This approach enabled us to gain a rigorous understanding of the impact of our manipulation on disclosure. In addition, our context provided participants with a wealth of background information. This aspect of our design enabled us to assess not only how forthcoming participants were with relevant negative information, but also the manner in which they used other positive and irrelevant information in their responses.

Our Study 2 results support our thesis: question phrasing influences the veracity of responses. We postulate that question phrasing affects disclosure by causing question recipients to make specific inferences about the question asker. We explore this hypothesized underlying mechanism in Study 3. In addition, we explore the influence of question phrasing in a context that afforded participants fewer opportunities to discuss irrelevant features and pivot from acknowledging a problem to providing information about potential solutions, as they were able to do in Study 2.

4. Study 3

In Study 3, we extend our investigation in several ways. Study 3 features a computer-mediated negotiation regarding the sale of a personal electronic device. This setting allows us to generalize our effect to consumer negotiations as well as to online communication. The negotiation features a problem with the device that the seller is motivated to conceal, but unlike Study 2, does not provide a ready solution to the problem. The online negotiation further allows us to structure a very brief interaction in which we could directly examine participants' inferences regarding the question asker based on the target question. We

theorize that because information about a counterpart's knowledge and intentions is often ambiguous, individuals infer this information from the questions they receive. Thus, Study 3 permits a direct test of the mechanism that underlies the effect of question phrasing on information disclosure.

4.1. Study 3: Method

4.1.1. Participants

We recruited 223 individuals (52% Female) from a paid research pool at a large East Coast U.S. university to participate in the study. The lab in which our study was conducted typically recruits 200–250 participants per week. Our specific sample size was determined by the availability of participants during the week of the study. We paid participants \$10 for an hour-long session that included this experiment among other, unrelated studies. Prior to conducting analyses, we dropped data from four participants who were suspicious regarding our cover story, though the same patterns and significance levels persist if these participants are included in analyses.

4.1.2. Design

Participants negotiated with a confederate regarding the sale of a used iPod. We assigned every participant to the role of "Seller" and randomized them into one of three conditions. The confederate asked a General, a Positive Assumption, or a Negative Assumption question. Participants responded to the confederate's question, and responded to scales used to measure their impressions of the confederate that included inferences regarding how knowledgeable and assertive the confederate is. This design allowed us to test our propositions that both Negative Assumption and Positive Assumption questions communicate greater expressions of buyer knowledge than General questions, and that Negative Assumption questions communicate greater assertiveness than both Positive Assumption and General questions.

4.1.3. Procedure

Participants sat in individual cubicles and read that the study would involve a computer-mediated negotiation with another participant regarding the sale of a used iPod. We then assigned participants to the role of "Seller" and instructed them to engage in a brief online negotiation. Unbeknownst to the participants, the responses from the buyer were provided by the chat software according to a condition-specific script. Participants learned that in addition to the \$10 payment for the hour-long session, they would receive a bonus of 5% of the final selling price of the iPod.

Prior to negotiating, participants read information about the iPod for sale (see Appendix C). The iPod was in good physical condition and had been kept in a protective case, but there were two incidents when the iPod had "frozen" inexplicably, losing all stored music. The current owner of the iPod was able to restore lost music from their computer, but the cause of the freezes (or the possibility of future freezes) remained unknown.

After reading the scenario, participants received a message from the fictitious buyer that began: "ok, I guess I'm supposed to go first. So you've had the iPod for 2 years..."[sic]. The end of the message consisted of a question about the condition of the iPod that varied across conditions. The General question read: "What can you tell me about it?" The Positive Assumption question read: "It doesn't have any problems, does it?" The Negative Assumption question read: "What problems does it have?"

Participants typed their response and sent it to the buyer. After a brief wait, participants received a message that the discussion period was over. To maintain the realism of the interaction, participants then selected an offer price for the buyer to consider.

While waiting for the buyer to respond to their offer, participants answered seven questions measuring the inferences they made regarding the buyer using 5-point Likert scales. Specifically, participants rated the extent to which the buyer was aware that the used iPod might

have a problem, recognized that used iPods in general sometimes have problems, suspected that the iPod had something wrong with it, and was knowledgeable about the purchase. These items were averaged into a scale reflecting buyer *knowledge* ($\alpha = 0.78$).

Participants also rated the extent to which the buyer was willing to ask tough questions about the iPod, was determined to learn information about the iPod, and was comfortable requesting information about the iPod. These items were averaged to create a scale of buyer *assertiveness* ($\alpha = 0.76$).

After completing the scales, participants received a message stating that the buyer accepted their offer. Participants then answered demographic questions and a suspicion probe.

4.1.4. Raters

We hired three coders who were blind to the experimental condition to code whether the seller had admitted that there had been technical problems with the iPod. Out of the 219 responses, the three raters offered the same judgment in 211 cases ($\alpha = 0.98$). We resolved disagreement in the remaining cases using majority rule.

The coders also counted the number of times each of the following neutral, positive, and negative features of the iPod were mentioned by respondents: color, charger, reason for selling (neutral); capacity/memory, preloaded songs, protective case, appearance (positive); and crashes (negative). We summed the number of times each feature was mentioned across coders and divided by the total number of features to calculate the relative frequency with which each feature was mentioned by condition. To get a holistic judgment of response valence, the coders also rated the extent to which the participants' responses presented the iPod in a positive light (-2 : "Extremely Negative," $+2$: "Extremely Positive"), $\alpha = 0.66$. Finally, the coders also rated the honesty of the participants' responses in light of all of the information they possessed regarding the iPod (1 : "Completely Deceptive," 5 : "Completely Honest"), $\alpha = 0.86$.

4.2. Study 3: Results

4.2.1. Content and valence of responses

In Fig. 2, we depict the relative frequencies of the iPod features participants mentioned by condition. Participants were much more likely to inform the buyer that the iPod had a history of crashing when they were asked a Negative Assumption question (89.0%) than when they were asked a Positive Assumption question (61.1%), $\chi^2(1) = 15.15$, $p < .001$, $\phi = 0.323$. Similarly, they were more likely to disclose the problem with the iPod when they were asked a Negative Assumption question than when they were asked a General question (8.1%), $\chi^2(1) = 96.39$, $p < .001$, $\phi = 0.810$ (comparing Positive Assumption and General question conditions, $\chi^2(1) = 45.53$, $p < .001$, $\phi = 0.558$).

Combining the four positive features (capacity/memory, preloaded songs, appearance, and protective case), an ANOVA reveals that participants asked a General question ($M = 1.84$, $SE = 0.09$) mentioned a greater average number of positive features than those asked a Positive Assumption question ($M = 0.50$, $SE = 0.09$) or those asked a Negative Assumption question ($M = 0.32$, $SE = 0.09$), $F(2, 216) = 80.08$, $p < .001$, $\eta^2 = 0.426$. Tukey post-hoc comparisons showed the differences between General and Positive Assumption and between General and Negative Assumption conditions were significant, both $p < .001$, whereas the difference between Positive Assumption and Negative Assumption was not significant, $p = .40$.

If we instead simply measure whether participants mentioned at least one positive feature, we found that participants asked a General question were more likely to mention a positive feature (93.2%) than those in the Positive Assumption condition (33.3%), $\chi^2(1) = 56.64$, $p < .001$, $\phi = 0.623$. Similarly, those asked a General question mentioned a positive feature more often than those in the Negative Assumption condition (23.3%), $\chi^2(1) = 74.08$, $p < .001$, $\phi = 0.710$

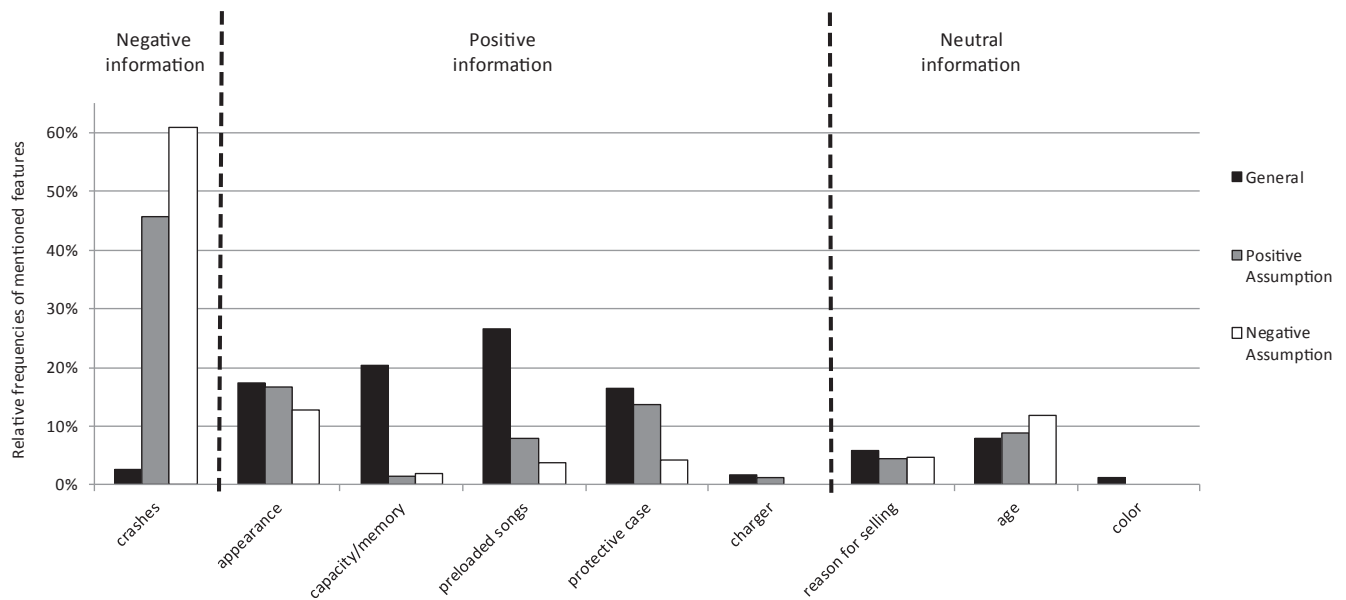


Fig. 2. Relative frequency of iPod features mentioned in responses by condition (Study 3).

(comparing Positive Assumption and Negative Assumption question conditions, $\chi^2(1) = 1.80, p = .179$).

The overall valence of participants' responses also varied between conditions. An analysis of variance revealed that questions significantly affected the positivity of responses, $F(2, 213) = 25.83, p < .001, \eta^2 = 0.195$. Participants described the iPod in more positive terms when they were asked a General question ($M = 1.11, SD = 0.59$) than a Positive Assumption question ($M = 0.67, SD = 0.66$), $t(142) = 4.26, p < .001$, Cohen's $d = 0.709$. Participants responses were even less positive regarding the iPod in response to the Negative Assumption question ($M = 0.37, SD = 0.62$) than to the Positive Assumption question, $t(141) = 2.76, p = .007$, Cohen's $d = 0.462$.

The raters also observed different levels of overall response honesty across conditions, $F(2, 216) = 33.20, p < .001, \eta^2 = 0.235$. Participants were rated as more honest in response to a Negative Assumption question ($M = 3.42, SD = 0.88$) than to a Positive Assumption question ($M = 2.79, SD = 1.13$), $t(143) = 3.73, p < .001$, Cohen's $d = 0.620$. Participants were also rated as more honest in response to a Positive Assumption question than to a General question, ($M = 2.23, SD = 0.57$), $t(144) = 3.83, p < .001$, Cohen's $d = 0.634$.

4.2.2. Inferences regarding the buyer

An analysis of variance showed that inferences regarding buyer knowledge differed across conditions, $F(2, 216) = 73.29, p < .001, \eta^2 = 0.404$. Based on our theoretical framework regarding the information communicated by the specificity of Positive and Negative Assumption questions, we conducted a planned contrast between those questions and General questions. This planned contrast revealed that participants who received either a Positive Assumption ($M = 3.19, SD = 0.82$) or a Negative Assumption question ($M = 3.72, SD = 0.57$) perceived the buyer to be more knowledgeable than participants who received a General question ($M = 2.30, SD = 0.76$), $F(1, 216) = 126.23, p < .001$.

Inferences regarding buyer assertiveness also varied across conditions, $F(2, 216) = 27.75, p < .001, \eta^2 = 0.204$. To fully test our theoretical framework, we conducted another planned contrast to test the proposed difference in perceived buyer assertiveness between Negative Assumption questions and Positive Assumption and General questions. This planned contrast revealed that participants rated the buyers who asked a Negative Assumption question to be more assertive ($M = 3.78, SD = 0.65$) than buyers who asked either a Positive Assumption ($M = 3.34, SD = 0.83$) or a General question ($M = 2.83, SD = 0.83$), F

(1, 216) = 38.94, $p < .001$. Consistent with our predictions, different questions led respondents to infer different levels of knowledge and different intentions of the asker (see Table 2).

4.2.3. Mediation

We predicted that questions influence responses by leading question respondents to make inferences about the question asker. To test this, we considered the mediating role of responder inferences in the relationship between condition and characteristics of the response (Baron & Kenny, 1986). We created two dummy variables to reflect the two key characteristics of the questions we studied. One dummy variable represented the *specificity* of the question. The General question did not mention a problem with the iPod (specificity = 0), whereas the Positive and Negative Assumption questions did (specificity = 1). The second dummy variable represented the *assertiveness* of the question. The Negative Assumption question is direct (assertiveness = 1) in a way that the Positive Assumption and the General questions (assertiveness = 0) are not.

4.2.3.1. Buyer's knowledge. To test the prediction that information about the buyer's knowledge inferred from the question mediates the effect of question type on honesty of responses, we regressed the honesty of responses on question specificity. Participants were more honest in response to more specific questions (Positive and Negative Assumption questions) than they were to the less specific (General) question ($\beta = 0.88, SE = 0.13, t = 6.69, p < .001$). When we added the buyer's rated knowledge to the regression, we observe a significant effect of the mediator ($\beta = 0.33, SE = 0.08, t = 4.08, p < .001$), and a reduced, although significant, effect of condition ($\beta = 0.50, SE = 0.16, t = 3.18, p = .001$) on honesty. The Sobel test confirmed that the reduction in the effect of condition was significant ($z = 3.82, p < .001$; Fig. 3). When we conducted a bootstrapped mediation with 5000 replications, the indirect effect of question specificity mediated through perceived knowledge was significant ($\beta = 0.38, SE = 0.10, z = 3.79, p < .001, 95\% \text{ CI } [0.184, 0.578]$). The remaining direct effect was also significant ($\beta = 0.50, SE = 0.16, z = 3.15, p = .002, 95\% \text{ CI } [0.189, 0.815]$).

We also regressed the positivity of responses on question specificity. We observed a significant negative effect of question specificity on positivity ($\beta = -0.59, SE = 0.09, t = 5.60, p < .001$). When we added participants' ratings of the buyer's knowledge to the regression we observed a significant effect of rated knowledge on positivity

Table 2
Descriptive statistics for coder ratings and participant inferences regarding buyers (Study 3).

	General	Positive assumption	Negative assumption	Test statistic	Alpha
Coder ratings					
Participant admitted problem	8% (6/74)	61% (5/33)	89% (65/73)	$\chi^2(2) = 99.71, p < .001$	0.98
Participant presented iPod in positive light (scale: -2 to +2)	1.11 (0.07)	0.67 (0.07)	0.37 (0.07)	$F(2,213) = 25.83, p < .001$	0.66
Honesty of participant	2.23 (0.10)	2.79 (0.10)	3.42 (0.10)	$F(2,216) = 33.20, p < .001$	0.86
Participant inferences regarding buyer: buyer knowledge ($\alpha = 0.78$)					
Buyer is aware iPod may have problem	1.93 (0.14)	3.14 (0.14)	3.95 (0.14)	$F(2,216) = 55.25, p < .001$	
Buyer recognized that used iPods have problems	2.46 (0.11)	3.36 (0.12)	3.77 (0.12)	$F(2,216) = 31.78, p < .001$	
Buyer suspected that iPod may have something wrong with it	2.08 (0.11)	2.96 (0.12)	3.62 (0.11)	$F(2,216) = 45.39, p < .001$	
Buyer is knowledgeable about the purchase	2.04 (0.12)	3.11 (0.12)	3.79 (0.12)	$F(2,216) = 58.60, p < .001$	
Participant inferences regarding buyer: buyer assertiveness ($\alpha = 0.76$)					
Buyer is willing to ask tough questions about the iPod	3.00 (0.12)	3.13 (0.12)	3.55 (0.12)	$F(2,216) = 5.83, p = .003$	
Buyer is determined to learn information about the iPod	2.76 (0.10)	3.14 (0.10)	3.38 (0.10)	$F(2,216) = 10.07, p < .001$	
Buyer is comfortable requesting information about the iPod	3.41 (0.10)	3.94 (0.11)	4.16 (0.10)	$F(2,216) = 14.12, p < .001$	

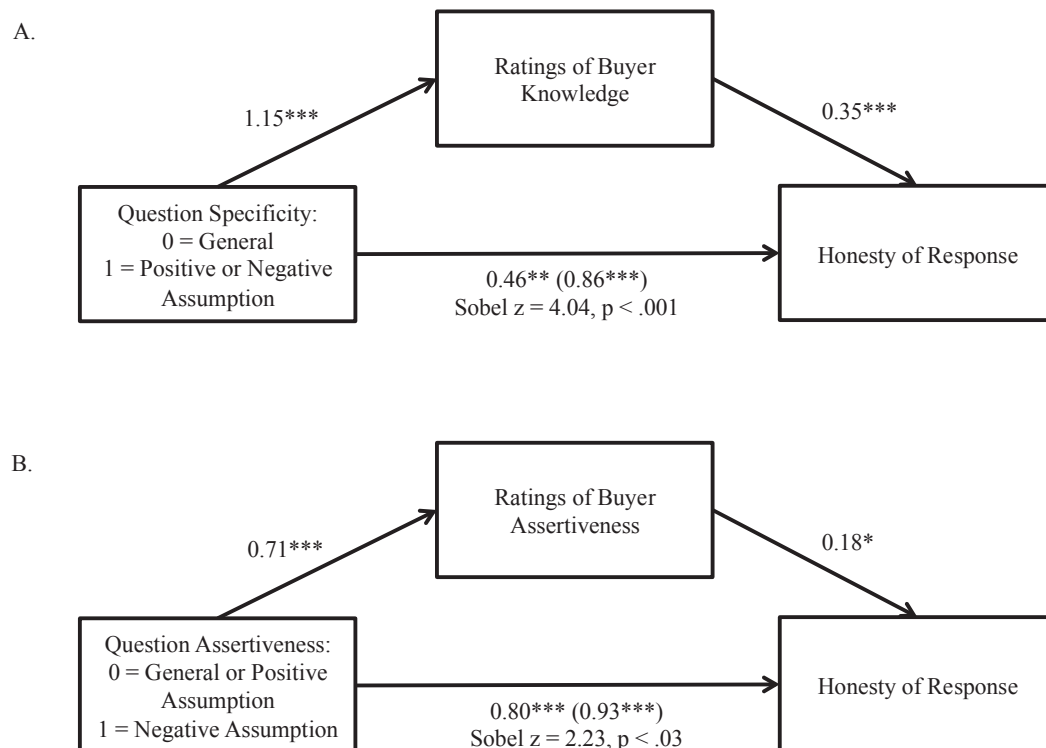
Note. Cells featuring percentages include raw frequencies in parentheses; cells featuring means include SEs in parentheses.

($\beta = -0.29, SE = 0.05, t = -5.31, p < .001$) and a significant, but reduced, effect of the dummy variable for specificity ($\beta = -0.26, SE = 0.11, t = -2.39, p = .017$). The Sobel test confirmed that this reduction was significant ($z = -4.76, p < .001$; Fig. 4). When we conducted a bootstrapped mediation with 5000 replications, the indirect effect of question specificity mediated through perceived knowledge was significant ($\beta = -0.34, SE = 0.07, z = 4.98, p < .001, 95\% CI [-0.469, -0.204]$). The remaining direct effect was also significant ($\beta = -0.26, SE = 0.10, z = 2.59, p = .010, 95\% CI [-0.449, -0.062]$).

Thus, whether the question did or did not specifically mention problems with the iPod revealed the buyer's level of knowledge to the

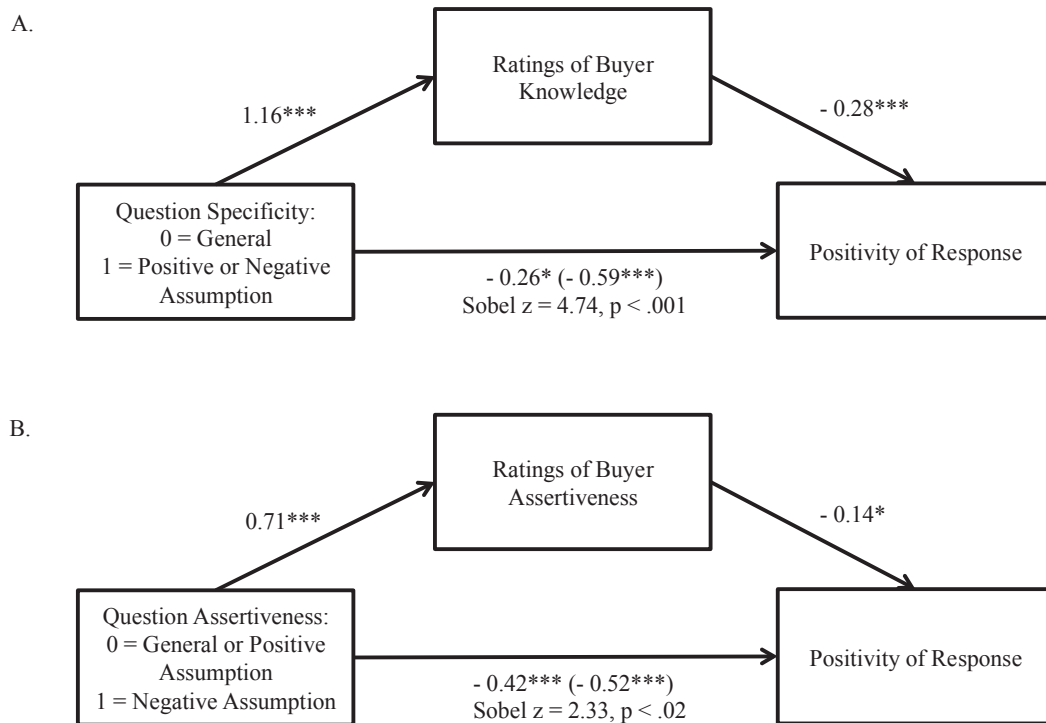
seller, and this information affected both the honesty and valence of responses.

4.2.3.2. Buyer's assertiveness. We repeated these mediation analyses to test the mediating effect of buyer's assertiveness. Our binary variable of question assertiveness was a significant predictor of the honesty of responses ($\beta = 0.92, SE = 0.13, t = 6.96, p < .001$). Participants were more honest in response to the Negative Assumption question than to the less assertive Positive Assumption and General questions. When we added ratings of *buyer assertiveness* to the regression, we again observed a significant effect of the mediator ($\beta = 0.16, SE = 0.08, t = 2.21, p = .036$) and a reduced but significant effect of our



All entries are raw coefficients. The association between the mediator and the DV is represented by a coefficient from a model where the IV is also a predictor of the DV. Numbers in parentheses refer to the total effect of the independent variable on the dependent variable.

Fig. 3. The effect of condition on honesty, mediated by disclosed information (Study 3). *Panel A:* The difference in response honesty for questions that ask and do not ask about problems mediated by perceptions of buyer knowledge. *Panel B:* The difference in response honesty for direct and indirect questions mediated by perceptions of buyer assertiveness. All entries are raw coefficients. The association between the mediator and the DV is represented by a coefficient from a model where the IV is also a predictor of the DV. Numbers in parentheses refer to the total effect of the independent variable on the dependent variable.



All entries are raw coefficients. The association between the mediator and the DV is represented by a coefficient from a model where the IV is also a predictor of the DV. Numbers in parentheses refer to the total effect of the independent variable on the dependent variable.

Fig. 4. The effect of condition on valence of responses mediated by disclosed information (Study 3). *Panel A:* The difference in response valence for questions that ask and do not ask about problems mediated by perceptions of buyer knowledge. *Panel B:* The difference in response valence for direct and indirect questions mediated by perceptions of buyer assertiveness. All entries are raw coefficients. The association between the mediator and the DV is represented by a coefficient from a model where the IV is also a predictor of the DV. Numbers in parentheses refer to the total effect of the independent variable on the dependent variable.

binary variable of assertiveness ($\beta = 0.80$, $SE = 0.14$, $t = 5.69$, $p < .001$). The Sobel test again confirmed significant mediation ($z = 1.99$, $p = .046$; Fig. 3). When we conducted a bootstrapped mediation with 5000 replications, the indirect effect of question assertiveness mediated through perceived buyer assertiveness was significant ($\beta = 0.11$, $SE = 0.05$, $z = 2.11$, $p = .035$, 95% CI [0.008, 0.219]). The remaining direct effect was also significant ($\beta = 0.80$, $SE = 0.14$, $z = 5.75$, $p < .001$, 95% CI [0.529, 1.076]).

Participants also offered less positive responses to the more assertive (Negative Assumption) question than to the two less assertive questions ($\beta = -0.52$, $SE = 0.09$, $t = -5.57$, $p < .001$). When we added the rated buyer assertiveness to the equation, we observed a significant effect of rated assertiveness of the buyer ($\beta = -0.14$, $SE = 0.05$, $t = -2.66$, $p = .008$) and a reduced but significant effect for our binary variable of question assertiveness, ($\beta = -0.42$, $SE = 0.10$, $t = -4.22$, $p < .001$). The Sobel test again confirmed significant mediation ($z = 2.43$, $p = .015$; Fig. 4). When we conducted a bootstrapped mediation with 5000 replications, the indirect effect of question assertiveness mediated through perceived buyer assertiveness was significant ($\beta = -0.10$, $SE = 0.05$, $z = 2.25$, $p = .025$, 95% CI [-0.188, -0.013]). The remaining direct effect was also significant ($\beta = -0.42$, $SE = 0.11$, $z = 3.84$, $p < .001$, 95% CI [-0.635, -0.206]).

In summary, whether the question did or did not specifically mention problems with the iPod led the seller to make inferences regarding the buyer's level of knowledge, and this information affected the honesty of responses. Additionally, the assertiveness of the question influenced perceptions of the asker's assertiveness, which also mediated between-condition differences in honesty and positivity of responses.

4.3. Study 3: Discussion

Supporting our thesis, we again find that Negative Assumption questions elicited more truthful negative information about a relevant problem than either Positive Assumption or General questions. Additionally, General questions elicited more positive responses than either Positive or Negative Assumption questions. This pattern of results suggests that in lieu of honestly disclosing negative information, those asked less assertive and less specific questions choose to focus on more positive information in a negotiation in order to create a favorable impression.

Interestingly, participants rated the buyer as more knowledgeable when the buyer asked a Positive or Negative Assumption question than when the buyer asked a General question, and rated the buyer as more assertive when the buyer asked a Negative Assumption question than when the buyer asked a Positive Assumption or General question. These differences in inferences of knowledge and assertiveness of the iPod buyer, in turn, mediated the relationships between question type and the deceptiveness of responses as well as between question type and valence of responses, with higher ratings of buyers' knowledge and assertiveness leading participants to act less deceptively and give less positively-valenced responses.

Across our studies, we demonstrate that question phrasing influences disclosure. In Studies 2 and 3, we also indirectly investigated the potential relational harm that asking Negative Assumption questions might cause. In these studies, however, the target of the assertive questions had information to disclose. In Study 4, we extend our investigation to consider the potential relational harm in asking a Negative Assumption question when negative information is unlikely to exist.

5. Study 4

In this study, we broaden our investigation of the potential relational hazards of asking an assertive question. We used methods similar to those used in Study 1, instructing participants to imagine being asked a question about how they use their work time by a prospective employer during an interview.

In addition to manipulating the type of question we asked the participant, we also manipulated how common the sensitive behavior in question was. Specifically, we asked participants about using work time for personal email or social media (an unproductive, but common use of work time), versus using work time for online gaming (a similarly unproductive, but much less common use of work time).

In a pilot study ($N = 101$, 40% Female, $M_{\text{age}} = 34$), we found that 74% of participants reported knowing someone who uses work time for personal email or social media, whereas only 25% of participants reported knowing someone who uses work time for online gaming. Furthermore, whereas participants thought it was moderately appropriate to assume someone had spent work time on the former ($M = 2.98$ on a 5-point scale), they believed it was significantly less appropriate to assume that someone has spent time on the latter activity ($M = 1.52$), $t(100) = 11.25$, $p < .001$. Thus, in Study 4 we examined whether participants make different interpersonal inferences about the interviewer after answering the target question with respect to a relatively frequent versus infrequent workplace transgression.

5.1. Study 4: Method

5.1.1. Participants

We recruited 500 mTurk workers (44% Female, $M_{\text{age}} = 34$) who lived in the U.S. and had an approval rating of at least 95% for their work on prior surveys. We paid participants \$0.30 to participate in a three-minute study.

5.1.2. Design

As in Study 1, we told participants to consider the scenario of interviewing for a summer internship with the U.S. Department of Energy. Participants imagined that the interview had already covered some basic facts about their background and experience, and the interviewer would now ask about workplace habits, beginning with the target question. Following this target question, participants reported their perceptions of the interviewer's competence and warmth (Cuddy et al., 2008; Fiske, Cuddy, & Glick, 2007).

We randomly assigned participants to one of five conditions. In two conditions, we asked participants a question about an inappropriate but common use of work time (personal email/social media) using phrasing similar to Study 1 (Negative Assumption-Frequent, Positive Assumption-Frequent), and in two other conditions we asked about a similarly inappropriate, but less frequent use of work time (online gaming; Negative Assumption-Rare, Positive Assumption-Rare). Finally, in the fifth condition we asked the General question, a question about typical use of work time without referencing a specific problem behavior. Again, we targeted 100 participants per condition in all online studies; thus, for the 5-condition design of Study 4, we targeted 500 participants total.

5.1.3. Procedure

Participants imagined that an interviewer asked them to think about their time management at a current or recent job and type a response to the target question that varied across conditions (see Appendix D for exact question wording).

In this study, we were particularly interested in participants' ratings of the interviewer after the interviewer asked the target question. To gauge interpersonal perceptions, we asked participants to complete an interpersonal evaluation scale that included sub-scales for competence (competent, confident, capable, efficient, intelligent, skillful) and warmth (friendly, well-intentioned, warm, good-natured, helpful); we

adapted this scale from past research (Fiske, Cuddy, Glick, & Xu, 2002). We observed a strong, positive correlation between these sub-scales ($r = 0.68$, $p < .001$), so to streamline our analyses, we combined the items into a single index of interpersonal evaluation ($\alpha = 0.96$). In addition, as in our other studies, we measured disclosures of the target behaviors by hiring three research assistants who coded participants' responses as disclosures or non-disclosures about using work time for personal matters ($\alpha = 0.90$).

5.2. Study 4: Results

5.2.1. Problem disclosure

As in Studies 1, 2, and 3, we found a significant difference in disclosure rates for the target behavior across conditions, $\chi^2(4) = 80.83$, $p < .001$, $\phi = 0.402$. Similar to our Study 1 results, only one participant in the General question condition (1.1%) admitted to spending work time on personal email, social media, or online gaming.

With regard to the more frequent behavior of using work time on personal email or social media, fewer participants in the Positive Assumption condition (6.8%) disclosed this behavior than did participants in the Negative Assumption condition (29.7%), $\chi^2(1) = 18.02$, $p < .001$, $\phi = 0.297$. Thus, even though our common behavior was still reported by a relatively small minority of our participants, both Positive and Negative Assumption conditions were significantly more likely to disclose this behavior than the General condition, $p = .050$ and $p < .001$, respectively.

Though directionally consistent with all of our other findings, the infrequent behavior (online gaming) was quite rare and we did not find significant differences across our conditions. That is, for the less frequent behavior, we found no difference in disclosure rates between Positive Assumption (1.0%) and Negative Assumption (1.9%) framings, $\chi^2(1) = 0.35$, $p = .555$. Further, rates of disclosure in both the Positive and Negative Assumption conditions were not significantly different from those in the General condition, $p = .912$ and $p = .649$, respectively.

5.2.2. Inferences regarding the Interviewer

Importantly, question phrasing had a significant impact on perceptions of the interviewer (see Table 3).

When asked about a relatively frequent, but inappropriate use of work time, participants who were asked a Positive Assumption question evaluated the interviewer similarly positively ($M = 4.63$, $SE = 0.09$) to those who received the General question ($M = 4.85$, $SE = 0.10$), $t(190) = 1.61$, $p = .108$. However, they did see those who asked the Negative Assumption question less positively ($M = 4.30$, $SE = 0.12$) relative to the General question-askers, $t(202) = 3.35$, $p = .001$.

The highest interpersonal cost of asking about a specific problematic behavior, however, emerged when participants responded to questions about a rare behavior. Relative to the evaluations of the General question askers reported above, interviewers who asked a Positive Assumption question ($M = 4.04$, $SE = 0.11$) about a rare behavior were rated significantly lower, $t(191) = 5.32$, $p < .001$. We observed a

Table 3
Ratings of the interviewer, by condition. Means and standard errors (Study 4).

	General	Positive assumption	Negative assumption
Frequent behavior	4.85 (0.12) ^{c,d,e}	4.63 (0.11) ^{c,e}	4.30 (0.11) ^{a,e}
Rare behavior		4.04 (0.11) ^{a,b}	3.77 (0.11) ^{a,b,d}

Note. For each dependent variable, superscripts indicate significant pairwise differences at $p < .05$ (after correcting for multiple comparisons using Tukey post-hoc tests), compared to the superscript of the corresponding column:

- ^a General.
- ^b Positive assumption frequent.
- ^c Positive assumption rare.
- ^d Negative assumption frequent.
- ^e Negative assumption rare.

similar pattern for the Negative Assumption questions ($M = 3.77$, $SE = 0.13$) relative to General questions, $t(190) = 6.42$, $p < .001$.³

5.3. Study 4: Discussion

In Study 4, we identify an interpersonal cost to asking an assertive question. Asking specific questions about rare, negative workplace behaviors harmed perceptions of the question-asker's warmth and competence. These reductions were larger when the questions were more assertive (moving from General to Positive Assumption to Negative Assumption) and when the questions focused on less frequent behavior (moving from General to Frequent to Rare). The interpersonal costs were greatest when the question focused on an infrequent behavior and was asked in a way that presumed the behavior's occurrence; in this case, respondents viewed the interviewer as the least warm and the least competent. At the same time, as we found in Studies 1, 2, and 3, the more assertive questions elicited greater disclosure.

It is important to note that in Studies 2 and 3, all participants possessed negative information, which the majority of them chose to withhold. Study 4, by contrast, featured realistic uncertainty about the presence of the behaviors in question. Here we see a clear effect of behavior frequency: asking an assertive question about unusual negative behavior harmed interpersonal evaluations.

These results suggest that an assertive line of questioning is best suited for common behaviors and, for uncommon behaviors, suggest conditions in which the benefits of disclosure outweigh the potential interpersonal costs. Specifically, when the probability of a problem is high (e.g. when buying an older used car), a question asker is more likely to incur a financial cost for asking a General question, and is less likely to pay an interpersonal cost for asking a more assertive question. However, when the probability of problems is low (e.g. buying a new appliance from a highly reputable brand), assertive questions will not elicit more negative information (since there is unlikely to be any), but can lead to interpersonal costs.

6. General discussion

Question phrasing systematically influences information disclosure. Across our experiments, participants were far more likely to reveal undesirable information when they were asked a Negative Assumption question that presupposes a problem than they were when they were asked a Positive Assumption question that presumes the absence of a problem, or a General question that gives respondents wide latitude with respect to which problems to address or avoid. Instead of revealing sensitive information, respondents were more likely to provide more positively-valenced and irrelevant information when they were asked a General question than when they were asked a Positive or Negative Assumption question.

In Study 1, we identify this pattern of disclosure for anonymous responses about how employees behave at work. In Study 2, we extended our investigation to face-to-face, incentivized interactions, and found that Negative Assumption questions elicited the most disclosure, whereas General questions elicited the most positive and irrelevant information. Importantly, we found no evidence that those who asked Negative Assumption questions incurred a social penalty.

In Study 3, we replicated our key finding with respect to the Negative Assumption, Positive Assumption, and General questions and disclosure in a new context. We also found that participants who received a Positive or Negative Assumption question rated a buyer as more knowledgeable than did participants who received a General question. Participants who were asked a Negative Assumption question rated the buyer as more assertive than did participants who received a

General or Positive Assumption question. The inferences participants made after being asked different questions mediated the differences in the veracity of their responses. That is, participants responded deceptively when asked questions that suggested that the asker was not particularly knowledgeable or assertive, and participants answered honestly when they were asked questions that suggested the asker was knowledgeable and assertive.

In Study 4, we extend our investigation by examining the interpersonal costs of asking assertive questions. In this study, we found that question askers were judged to be less warm and competent when they asked more assertive questions about more unusual behaviors.

A mechanical effect of our different study designs was that Positive and Negative Assumption questions elicited much higher disclosure rates for target problems in Study 2 (39.4% and 100%, respectively) and in Study 3 (61.1% and 89.0%) than in Study 1 (18.8% and 28.0%) and Study 4 (6.8% and 29.7%). This variation in disclosure rates occurs because Studies 1 and 4 asked about target behaviors for which actual baseline rates were surely less than 100%, whereas Studies 2 and 3 exogenously assigned the problem to all participants. Even so, we consistently found that disclosure rates were higher in response to Positive Assumption questions than to General questions, and higher still in response to Negative Assumption questions. Study 4, however, highlighted an important boundary condition to this effect: when questions were asked about *rare* behaviors. Namely, there is no reason to expect an increase in disclosure rates where there is no problem or behavior to disclose, regardless of the question phrasing. Taken together, while the onus is on the question asker to properly identify areas of concern when asking questions to avoid being deceived, our research demonstrates that Negative Assumption questions are consistently effective at eliciting disclosure when problems do exist.

We focus our investigation on interactions characterized by asymmetric information and motivated disclosure. Prior work has advised individuals in contexts such as negotiations, interviews, and consumer transactions to ask questions (Malhotra & Bazerman, 2007; Shell, 2006; Thompson, 2014), but has offered surprisingly little guidance with respect to the types of questions individuals should ask. Our work demonstrates that because questions influence deception through the inferences respondents make, individuals should be thoughtful regarding question phrasing. By asking questions that communicate one is not knowledgeable or assertive, individuals may make themselves more vulnerable to deception.

6.1. Theoretical contributions

In this work, we link question phrasing with disclosure and deception. This investigation advances our understanding of the role of questions in conversation, as well as our understanding of interpersonal factors that influence deception.

Our research advances theory with respect to deception and honesty in several ways. First, we offer a conceptualization and empirical test of the effect of asking questions on honest disclosures. Related work has demonstrated that interpersonal communication influences self-interested behavior in negotiations (Brett et al., 2007), and prior scholars recommend asking questions in interactions characterized by asymmetric information and motivated disclosure (e.g., Shell, 2006). Yet, there is no work testing whether all questions perform equally well and no framework to predict which types of questions would elicit more information that is truthful. Our research addresses this gap by demonstrating that different questions lead to systematically different rates of information disclosure.

Second, we identify the psychological mechanism through which questions promote honesty. We show that in addition to soliciting information, questions can lead respondents to make inferences about the question asker's knowledge structures and intentions. Though individuals may make these inferences from other conversational and environmental cues, we identify questions as a novel—and

³ These results remain consistent in both direction and magnitude if we desegregate our index of interpersonal evaluation into its warmth and competence components.

important—source of these cues. Prior work has shown that negotiators regularly make inferences about their counterparts based on social signals. For example, people infer toughness based on nonverbal cues when interacting with angry negotiators (Van Kleef et al., 2004). Our research demonstrates that question phrasing provides another important social signal, thus advancing our understanding of both the social dynamics of negotiation and the role of asking questions in interpersonal interaction.

Additionally, our proposition that questions reveal information offers an alternative mechanism to account for some prior findings. Consider, for example, the disparate car speed estimates identified by Loftus and Palmer (1974). When the experimenter asks about cars that “smashed” into each other, participants may infer that the experimenter (who, after all, has seen the video) judged the speed of the cars to be higher than when the experimenter asks about cars that “bumped” into each other. That is, it is possible that participants’ estimates were influenced by information revealed by the question about the experimenter’s beliefs, rather than (or in addition to) the increased availability of high-speed estimates postulated by the authors.

6.2. Practical implications

Our findings inform several practical prescriptions. First, negotiators should carefully construct the types of questions that they ask in negotiations. To curtail their risk of deception, negotiators should use questions that communicate both knowledge and assertiveness to increase disclosure. For many negotiators (and others), asking such questions may require practice and confidence. It will also require preparation to identify key issues that merit a line of inquiry.

Second, negotiators can benefit by understanding that the phrasing of questions influences how others perceive them. Our research shows that Negative Assumption questions can boost perceptions of assertiveness and technical knowledge when problems are present, but risk detractors to social evaluation if problems are absent. Negotiators can readily shift perceptions by asking different types of questions. Similarly, our findings linking perceptions with veracity suggest that negotiators should engage in other activities to create the impression that they are knowledgeable and assertive—and avoid actions or revelations that create an alternative impression.

Third, we show that negatively-phrased questions can elicit more information than positively-phrased questions when asking about individuals’ personal behavior (Studies 1 and 4) or when asking about information provided as part of the experiment (Studies 2 and 3). Though the parallel structure of Positive Assumption and Negative Assumption questions used in Study 1 provided a clean test of our hypotheses, the Negative Assumption phrasing used might be conversationally awkward when asking about personal behavior in other contexts. In an mTurk study (methods and results presented in Appendix E), we also found that participants who were asked “how many times” they had engaged in a sensitive behavior (e.g., shoplifting) were far more likely to disclose engaging in the behavior than those asked the equivalent Positive Assumption question “You haven’t [engaged in an undesirable behavior]... have you?”

Our results also reveal that participants did not view their responses as more deceptive, even when they provided dramatically less truthful information. Although it may be that participants were simply hesitant to admit to deceiving their counterparts, it may also be the case that deceptive behavior *seemed* appropriate in response to less pointed questions. Less assertive questions intended to raise a point of concern might be insufficient to promote full disclosure, but such incomplete disclosure is not necessarily malicious. Rather, question recipients might fail to consider the exact intent of a question, and believe that they gave sufficient information based on their interpretation of the question. Questions can be fraught with subtle signals, and identifying likely sources of miscommunication and question misinterpretation could facilitate conflict resolution and improve organizational effectiveness.

6.3. Limitations and future research

Several limitations suggest directions for future research. First, we focused our investigation on three broad classifications of questions: General, Positive Assumption, and Negative Assumption. This approach carefully controlled the structural and attentional features of the questions to investigate the direct impact of question phrasing on respondent honesty, but there are certainly many other types of questions to consider. For example, one could ask about a specific issue without making a positive or negative assumption, using a more neutral structure. Future research should explore the impact of such specific, assertive questions, as well as indirect approaches that might be common in everyday conversation (e.g., making a disclosure of one’s own to try to elicit a reciprocal disclosure).

Second, our research examined the role of questions on disclosure between people of relatively equal status. Future research should explore the efficacy of asking assertive questions when status differences are present. For example, when managers probe employees with assertive questions, employees may provide honest responses. However, when employees ask managers such questions, managers may react negatively to the assertiveness of a subordinate. Similarly, questions might implicitly communicate status in situations in which the relative hierarchy of individuals is uncertain.

Third, we relied on laboratory experiments to draw our causal inferences between asking questions and honesty. The advantage of using this methodology is that we can exert greater experimental control and strengthen the internal validity of our findings. However, future research should explore organizational settings where employees receive questions and are expected to reveal truthful information (e.g., performance appraisals or expense reporting).

There may also be benefits to General questions that our investigation did not address. When information seekers do not know what problems to ask about, General questions still provide the opportunity for question recipients to address the issue, even if the probability of such a disclosure is lower than if the question asker were to ask a more specific question about that topic. Additionally, our investigation has largely focused on interactions between strangers, but in many interpersonal interactions, there may be concerns regarding relational backlash from asking more assertive questions. In these settings, further research could determine the role of question phrasing in domains beyond resolving information asymmetry, such as relationship promotion.

It is possible that different question phrasings imply different expectations or social norms, and may license disclosure. Asking about a particular behavior might make that action appear more normative, and enable a respondent to feel comfortable disclosing their behavior. Asking a project manager how much over budget the project is may communicate the expectation that all projects run over budget, facilitating honest disclosure of budgetary problems. However, if the manager had previously been working strenuously to get the project back under budget, the communication of this implicit expectation that all projects run over budget may also license the manager to spend more. Past work has shown that asking people to report their expectations regarding engagement in future vice behaviors can “license” those behaviors (Fitzsimons et al., 2007). Future research could test the extent to which different question phrasings might also promote behavior by communicating social norm information, and the potential moderating effects of existing social norms on subsequent behavioral responses.

7. Conclusion

Carefully phrased questions can promote honesty. We show that askers can phrase questions to communicate knowledge and assertive interaction intentions, and in turn, compel a self-interested conversation partner to be honest. We also find that general questions are not very effective in eliciting honest disclosures, and instead afford

respondents with opportunities to lie by omission and redirect the conversation to other topics. Simply asking *more* questions in strategic settings may be insufficient to elicit the truth, the whole truth, and nothing but the truth. Instead, people must ask the *right* questions, being mindful not only of the information they seek, but also of the information they reveal.

Disclosure

The data from each study are available as Online Supplemental

Appendix A. Questions used in Study 1

	General	Positive assumption	Negative assumption
Workplace attendance	What can you tell us about your workplace attendance over the last year?	Over the last year, you haven't used a sick day when you weren't actually sick, right?	Over the last year, you have used a sick day when you weren't actually sick, right?
Gossip	What can you tell us about your interactions with coworkers over the last year?	Over the last year, you haven't occasionally gossiped about a coworker, right?	Over the last year, you have occasionally gossiped about a coworker, right?
Use of work time	What can you tell us about your use of work time in a typical week?	In a typical week, you don't occasionally use work time for personal email or social media, right?	In a typical week, you occasionally use work time for personal email or social media, right?

Appendix B. Information that study participants and raters received about the company and job offer in Study 2

You are a hiring manager for a management consulting firm, Schuylkill Associates. You have offered the candidate a job at your firm as a Business Analyst. Because the candidate has similar offers from two other firms, it is likely the candidate will want to learn more about each firm to determine which offer to take. This sheet provides information about both the position and the firm that might be relevant in the upcoming discussion with the job candidate.

- **Position:** Business analyst.
 - Entry-level position within the firm.
 - Typical analyst stays in the position for 3–5 years before leaving (promotion, attend graduate school, etc.).
- **Salary:**
 - \$81,990, above mean analyst salary in Philadelphia (\$63,945) and USA (\$65,991).
- **Benefits:**
 - Health, life, disability, vision, and dental insurance to all employees and families.
- **Higher education:**
 - Many analysts are admitted to top MBA programs.
 - Those who commit to firm for 2+ years after completing the MBA receive 100% tuition reimbursement.
- **Growth:**
 - Firm has doubled in size over last 6 years and has approximately 490 employees.
 - Internal projections suggest the firm will double again in the next ten years.
 - The firm has added 6 Fortune 500 companies as clients in the last 8 months.
 - 17 junior analysts have been promoted (12 female) in 2015.
- **Corporate culture:**
 - **Lawsuit:** After settling public lawsuit in 2013 (members of firm leadership were accused of discriminatory promotion practices and workplace abuse of lower-level consultants), a new internal complaint-tracking system was implemented in 2014.
 - **Complaints:** Rate of complaints has remained high: since January 1, 2014, the tracking system has registered 162 official complaints.
 - Lower-level employees often required to work 80–90 h weeks.
 - Harsh personal criticism is received through anonymous feedback.
 - Junior staff complain that the “forced ranking” promotion system incites competition and that senior staff have no empathy for their complaints since this is the practice in most firms.
 - **Morale:** The firm has put together a task force to improve morale.
 - The task force has implemented “Casual Jeans Fridays” throughout summer months, and travel to client sites has been reduced to 4 days a week for most project teams.
 - There is free coffee offered in the lobby from 6 to 8:30 every morning to encourage staff to socialize.

Appendix C. Information that study participants and raters received about the iPod in Study 3

You have been assigned the role of Seller in this negotiation. Your job in this exercise is to negotiate the sale of a used iPod. You received the iPod as a birthday gift and have enjoyed using it. However you have recently gotten a job, and given the increase in your income, have decided to buy a new iPhone. Because the iPhone has a large memory capacity and has all the features of your iPod, you realized that you don't need to own both devices. You placed an ad on Craigslist to advertise your iPod.

The iPod you are selling is a little under two years old. It has an 80G memory (enough for about 20,000 songs and much more than you have ever used) and retailed new for around \$150. It is silver and you have kept it in a plastic case to protect it from being banged around or scratched. As a result, it looks new. You checked Craigslist, and saw that similar used iPods in good condition were selling for about \$30–\$70.

In the time you used it, you've loaded around 4 thousand songs on it by copying your CD collection and also by downloading music from the web. Your music collection is eclectic and would be appealing to a lot of young people. If you find a buyer for the iPod, you are willing to either delete your music from the device before handing it over or leave it and allow the new owner to enjoy it. You consider this to be a positive selling point.

Overall, the iPod is in great working condition. The only problem you have had with it were two instances when the iPod froze. After freezing you could not get the device restarted until you found a fix online that involved resetting the factory defaults and as a result deleting all your music. Thankfully, you had all your songs on the hard-drive of your computer, so besides wasting a couple hours, no harm was done.

On the following page you will see the ad that you placed on craigslist, and which the buyer you are about to negotiate with will also see.

Appendix D. Questions used in Study 4

General	What can you tell me about your use of work time in a typical week?
Positive assumption, frequent behavior	In a typical week, you don't use work time for personal email or social media, right?
Negative assumption, frequent behavior	In a typical week, you use work time for personal email or social media, right?
Positive assumption, rare behavior	In a typical week, you don't use work time for online gaming, right?
Negative assumption, rare behavior	In a typical week, you use work time for online gaming, right?

Appendix E. Participants, procedure, and results for supplemental mTurk study (N = 203)

E.1. Participants

We recruited 203 U.S. college students (35% Female, $M_{age} = 24$) via Amazon Mechanical Turk (mTurk), and paid participants \$0.50 to participate in a ten-minute study.

E.2. Procedure

Participants answered 23 questions via an online survey about potentially sensitive behaviors they may or may not have performed while attending college. We selected behaviors that were risky and/or unethical, such as having unprotected sex or exaggerating one's qualifications on a resume. Between participants, we randomly assigned respondents to one of two question-phrasing conditions: Negative Assumption or Positive Assumption questions.

In the Negative Assumption condition, participants answered questions that presumed the occurrence of the behavior, such as: "How many times in the last year have you cheated on a test or quiz?" Participants typed the number of times they performed the behavior in a text box before continuing to the next question.

In the Positive Assumption condition, participants answered questions that were phrased to assume the behavior has not been performed, such as: "In the last year, you haven't cheated on a test or quiz, have you?" Participants in this condition first answered "Yes" or "No" to indicate whether they had performed the target behavior. If they answered "Yes," we asked them how many times they had performed the behavior.

E.3. Results

We first counted the number of behaviors participants reported performing at least once. A *t*-test revealed that participants in the Negative Assumption condition ($M = 5.89$, $SD = 4.18$) reported performing a greater number of the target behaviors than did those in the Positive Assumption condition ($M = 3.95$, $SD = 3.02$), $t(207) = 3.86$, $p < .001$.

Many participants indicated that they never performed certain behaviors while others indicated that they performed these behaviors many times (e.g., one participant reported using illegal drugs 400 times in the past year). To deal with this non-normal distribution of results, we transformed the data by taking the square root of all observations, and regressed the square-rooted observations on condition, clustering observations at the level of participant. We find that participants in the Negative Assumption condition indicated that they performed the undesirable behaviors more frequently than did those in the Positive Assumption condition, $\beta = 0.268$, $SE = 0.106$, $p = .012$.

Appendix F. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.obhdp.2018.05.006>.

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