

Overly Shallow?: Miscalibrated Expectations Create a Barrier to Deeper Conversation

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People may want deep and meaningful relationships with others, but may also be reluctant to engage in the deep and meaningful conversations with strangers that could create those relationships. We hypothesized that people systematically underestimate how caring and interested distant strangers are in one's own intimate revelations and that these miscalibrated expectations create a psychological barrier to deeper conversations. As predicted, conversations between strangers felt less awkward, and created more connectedness and happiness, than the participants themselves expected (Experiments 1a–5). Participants were especially prone to overestimate how awkward deep conversations would be compared with shallow conversations (Experiments 2–5). Notably, they also felt more connected to deep conversation partners than shallow conversation partners after having both types of conversations (Experiments 6a–b). Systematic differences between expectations and experiences arose because participants expected others to care less about their disclosures in conversation than others actually did (Experiments 1a, 1b, 4a, 4b, 5, and 6a). As a result, participants more accurately predicted the outcomes of their conversations when speaking with close friends, family, or partners whose care and interest is more clearly known (Experiment 5). Miscalibrated expectations about others matter because they guide decisions about which topics to discuss in conversation, such that more calibrated expectations encourage deeper conversation (Experiments 7a–7b). Misunderstanding others can encourage overly shallow interactions.

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A number of porcupines huddled together for warmth on a cold day in winter; but, as they began to prick one another with their quills, they were obliged to disperse. However the cold drove them together again, when just the same thing happened . . . In the same way the need of society drives the human porcupines together, only to be mutually repelled by the many prickly and disagreeable qualities of their nature. The moderate distance which they at last discover to be the only tolerable condition of intercourse, is the code of politeness and fine manners.—Schopenhauer, 1851/1964, p. 226

Schopenhauer argued that people want deeper and more intimate relationships but are reluctant to pursue them because they expect that greater intimacy will be unpleasant. These expectations, in turn, discourage intimacy, entrenching the “politeness and

fine manners” of small talk as the norm in everyday discourse. Indeed, everyday conversation seems to be anything but a stream of deep and meaningful exchanges: Fewer than half of people's conversations are substantive and meaningful (Mehl et al., 2010), creating an entire genre of self-help books promising to help you make better “small talk” and “chit chat” with those around you.

The fine manners of small talk aside, empirical research suggests notable benefits of having more “deep talk” in everyday life. Deep and meaningful conversations strengthen social ties (Aron et al., 1997; Collins & Miller, 1994), relieve the psychological burdens of secrecy or negative emotional experiences (Pennebaker, 1997; Slepian & Moulton-Tetlock, 2019), and speed the development of close relationships (Altman & Taylor, 1973; Derlega et al., 2001). Presumably because positive social relationships bring happiness and wellbeing (e.g., Diener & Seligman, 2002), those who spend more time engaging in deep talk tend to be happier than those who spend relatively more time in small talk (Mehl et al., 2010; Milek et al., 2018). With all of the positive outcomes that spring from deep talk, what keeps people from having more of it in their everyday lives?

Here we examine the psychological processes guiding conversations to understand why people choose to discuss relatively deep versus shallow topics, and whether those choices accurately

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anticipate the outcomes of relatively deep and shallow conversations. We define deep conversations as those in which two people engage in self-disclosure by revealing personally intimate information about their thoughts, feelings, or experiences. We predicted that people's decisions to engage in deep conversation are guided by their expectations about how much their interaction partner cares about the intimate details of one's life, and that people are reluctant to engage in deep talk to the extent they believe their conversation partner will be indifferent to the conversation's content. Perhaps more important, we also predict that people's expectations are systematically miscalibrated, such that they underestimate how much others care about one's own disclosures in conversation, and thereby overestimate how awkward and uncomfortable deep conversations will be. We suggest that these miscalibrated expectations about others can create a psychological barrier to engaging in deep conversations more often in everyday life.

Psychological Barriers to Meaningful Conversation

Belonging is a fundamental human need virtually on par with eating and sleeping (Baumeister & Leary, 1995; Ryan & Deci, 2000), and yet previous research suggests that people often forego opportunities to connect with others that would satisfy this need and thereby enhance both their own and others' wellbeing. People can be somewhat reluctant to talk with strangers (Dunn et al., 2007; Epley & Schroeder, 2014; Mallett et al., 2008), give compliments (Boothby & Bohns, 2021; Zhao & Epley, *in press*), express gratitude (Kumar & Epley, 2018), perform random acts of kindness (Dunn et al., 2008; Kumar & Epley, 2021), or disclose personal information (John et al., 2016; Kardas et al., 2021), at least partly because people in these cases underestimate the positive impact their social behavior will have on others. Even the briefest engagements with others, from saying "hello" to a barista (Sandstrom & Dunn, 2014a, 2014b) to making eye contact with a passerby (Wesselmann et al., 2012), can increase the sense of connection to others, and yet people sometimes forego even these easy opportunities to engage with others. Misunderstanding how positively others value social interaction can create a barrier to engaging with others, thereby creating a systematic barrier to satisfying the basic human need for belonging.

Whereas existing research has primarily examined how wisely people choose *whether* to engage with others, we expand this body of work by examining how wisely people choose *how* to engage with others in the midst of conversation. Any conversation can range from relatively shallow and superficial to relatively deep and intimate. Like many decisions that are guided by some assessment of expected costs and benefits (Becker, 1993), we predict that people choose the depth of conversation based partly on how they expect that an intimate versus shallow conversation is likely to unfold.

Although there are likely to be multiple mechanisms that influence people's expectations about a conversation, we theorize that people's expectations about shallow and deep conversation are guided by at least two inferences. First, expectations should be guided by the information people expect to share during the conversation. Shallow conversations tend to be impersonal and require relatively little self-disclosure. People are unlikely to feel vulnerable to others' evaluations while discussing impersonal topics like

the weather. Deep conversations, in contrast, require sharing personal information about one's past experiences, preferences, or beliefs, which could leave people feeling more vulnerable to others' evaluations (Berenson et al., 2009; Leary, 1983). Existing research suggests that these fears of vulnerability may be misplaced. In one series of experiments, people overestimated how harshly they would be judged by others when they were in the midst of some embarrassing blunder or mishap (Savitsky et al., 2001). In another series of experiments, people overestimated how negatively they would be judged when they revealed personal imperfections or weaknesses to another person (Bruck et al., 2018). Finally, strangers talking for the first time reported feeling more positive, less awkward, and more connected to each other after a relatively deep conversation than they expected, especially when they were communicating over a relatively more intimate (voice-based) communication media compared with less intimate (text-based) media (Kumar & Epley, 2021, Experiment 2). This research did not include a shallow conversation condition for comparison nor did it examine underlying mechanisms that might explain why people would undervalue deep conversation. Collectively, this existing research suggests that deeper conversations may not leave us as vulnerable as we might expect.

Second, expectations should also be guided at least in part by people's inferences about how much one's conversation partner will care about the intimate and meaningful topics that make up deeper conversation. Whereas a shallow conversation may be unlikely to feel awkward or uncomfortable regardless of how caring and interested the recipient is, a deep conversation may feel quite awkward with an uncaring or indifferent partner who cares little for learning more about us. This predicts that people should have more positive expectations about deep conversation when they expect their conversation partner to be caring and interested than when they expect another person to be uncaring or indifferent. People should also be more willing to discuss deeper topics when they expect their partner to be relatively caring and interested in what one has to say.

Identifying how wisely people choose the depth of their conversation topics requires understanding how accurately people infer both their own and others' care and interest in the content of deep conversation. People can directly assess, via introspection, how much they personally care about what others have to say regarding deep and intimate topics, but have to infer how much others care (Epley & Waytz, 2010; Gilbert & Malone, 1995; Jones, 1979; Nisbett & Wilson, 1977). People are also deeply motivated to connect with others (Baumeister & Leary, 1995) and deeply value signs of trustworthiness and honesty from others, including others' willingness to open up in deeper conversation and their willingness to listen attentively to one's own statements (Ames et al., 2012; Cuddy et al., 2007; Kluger et al., 2021; Kluger & Zaidel, 2013; Levine & Cohen, 2018). One series of experiments even indicated that people underestimate how much attention others pay to them in everyday life (Boothby et al., 2017), suggesting that people may fail to fully appreciate how much interest others are likely to take in them.

This prior research led us to make several predictions about the accuracy of people's expectations about care and interest. First, we predicted that people would assume that they would care more about the intimate details of what they share in the midst of a deep conversation than a typical stranger would care about those same

intimate revelations. Second, we predicted that people's beliefs about their own interest and care would be more calibrated than their inferences about a stranger's interest, thereby leading people to underestimate others' interest and care (but not their own). Third, we predicted that underestimating the extent to which others are interested in, and care about, one's statements in conversation would also lead people to underestimate how connected they would feel to their conversation partner and how happy they would feel about the conversation, and to overestimate how negative the conversations would be. Fourth, because conversations with seemingly indifferent others could feel awkward when they require more intimate self-disclosure, we predicted that participants would overestimate the awkwardness of deep conversation *more* than the awkwardness of shallow conversation. Finally, because one's friends are known to care more about oneself than strangers, we expected that people would be more calibrated predicting the outcomes of their conversations with friends than with strangers because people would anticipate more positive outcomes with friends, even when discussing relatively intimate topics.

We believe that misunderstanding others' sociality—the degree to which others are interested in, and care about, connecting through conversation—matters because it creates a psychological barrier to engaging in deeper and more meaningful conversation. This predicts that people are overly reluctant to engage in deep conversation because they have miscalibrated expectations about the consequences of sharing meaningful information with others whose interest and care is unknown. A simple alternative interpretation is that people do not engage in deeper conversations with strangers because they do not care about what the *other* person has to say. If people are indifferent to strangers' responses in deep conversations, and hence are uninterested in having deeper conversations with them, then none of the hypotheses we articulated above would be worth testing because beliefs about others' care would not guide people's decisions to engage in relatively shallow versus deep conversation.

We conducted an initial pilot experiment using Amazon's Mechanical Turk (MTurk; $N = 188$) in which participants imagined talking with someone they had never met before and were asked how interested they were in sharing intimate details with a stranger or learning those same details about a stranger. Specifically, we randomly assigned participants to one of four roles: *Listeners* imagined that they would listen to the other person's responses to a series of questions, *Askers* imagined that they would ask the other person a series of questions and then listen to the person's responses, *Discussants* imagined that they would both ask and answer a series of questions with the other person, and *Answerers* imagined that they would answer a series of questions while the other person listened. Participants then viewed a list of 20 pretested discussion questions that varied in intimacy from very shallow and superficial to very deep and intimate (see [Appendix](#)), and selected the five questions they preferred for the exchange. We hypothesized that Discussants and Answerers, who were required to answer the questions and reveal information about themselves, would choose less intimate questions on average than Listeners and Askers, who were simply able to learn about others.

Results supported these hypotheses. Listeners ($M_{\text{intimacy}} = 5.06$) and Askers ($M_{\text{intimacy}} = 4.71$) chose questions higher in average intimacy than either Discussants ($M_{\text{intimacy}} = 4.04$) or Answerers ($M_{\text{intimacy}} = 3.58$, $ps \leq .008$). Whereas the majority of the

questions selected by Listeners ($M = 3.06$ out of 5, $p = .017$) were “deep” questions that were more intimate than the median question, and Askers ($M = 2.74$, $p = .320$) selected equal numbers of deep and “shallow” questions, Discussants ($M = 1.89$, $p = .003$) and Answerers ($M = 1.36$, $p < .001$) chose *fewer* deep questions than shallow questions (see [online supplemental materials](#) for the full method and results). This suggests that people are indeed interested in knowing intimate information about others (see also [Hart et al., 2021](#)), but are reluctant to reveal intimate information about themselves. A follow-up experiment ($N = 144$) suggested that this difference did not stem from differences in the perceived difficulty of generating answers to shallow versus deep questions, as participants' choices did not differ between a condition in which they imagined revealing prewritten responses ($M_{\text{intimacy}} = 3.79$) and one in which they imagined generating answers to the questions in real time ($M_{\text{intimacy}} = 3.83$, $p = .885$). Again, participants in the conditions that required revealing personal information in conversation preferred to discuss less intimate questions than participants who imagined only listening to the other person's responses ($M_{\text{intimacy}} = 4.80$, $ps < .001$; see [online supplemental materials](#)). These results indicate that these participants were more interested in getting to know meaningful information about others than they were in revealing meaningful information to others, suggesting a barrier to engaging in deep conversation that may come from inferences about how others will respond to these self-disclosures. This article reports a series of experiments testing whether a reluctance to engage in deep conversation arises partly from miscalibrated concerns that strangers will be indifferent toward one's self-disclosures, creating more superficial conversations than might be ideal for one's own and others' wellbeing.

Of course, conversations can range from very shallow and superficial to very deep and intimate. Our hypotheses do not suggest that underestimating others' care creates a barrier to having the *deepest* conversations. Some topics may be sufficiently deep that people will prefer to avoid discussing them even with close others who they expect to be highly caring and considerate. Rather, our hypotheses suggest that underestimating others' care creates a barrier to having *deeper* conversations. By deeper conversations we mean those that are more intimate than people's typical conversations and are instead closer to the depth of conversation that people report wishing they would experience more often. We will test each component of our reasoning empirically: whether people's typical conversations are less intimate than they wish they would be, whether people underestimate others' care during conversation, and whether experimentally manipulating people's beliefs about others' care influences the depth of conversation that they prefer.

Overview of Experiments

We conducted a series of experiments to test our hypotheses, and in doing so we recruited diverse samples of participants including primarily American undergraduate and master's degree students (Experiments 2, 3, 4a, 4b, 6a, and 6b), community members (Experiments 3 and 5), financial services employees and executives (Experiments 1a and 1b), international MBA students from around the world (Experiment 1c), and online participants (Experiments 7a and 7b). We first tested whether people underestimate the positivity of deep and intimate conversations with

strangers by asking participants in Experiments 1a–1c to discuss a series of deep and intimate questions with a stranger. Participants reported how they expected to feel after these conversations, and we then compared participants' expectations against their actual experiences. Experiments 2–6b compared shallow conversations against deeper conversations by manipulating the intimacy of participants' conversations. Experiment 5 also compared conversations between strangers versus known family or friends to examine whether participants are especially likely to misunderstand the outcomes of deep conversations with strangers. Experiments 6a and 6b assigned participants to engage in *both* shallow and deep conversations as a more direct test of whether relatively deeper conversations build stronger connections between strangers than shallower ones. Finally, Experiments 7a and 7b examined the extent to which expectations of others' interest and care create a psychological barrier to deeper conversations.

Our experiments make several novel contributions to our understanding of social cognition and interpersonal relationships. First, previous experiments test whether people appreciate the benefits of distant social connections with strangers (Dunn et al., 2007; Epley & Schroeder, 2014; Mallett et al., 2008) but do not measure or manipulate the intimacy of these conversations. Strangers tend not to engage in particularly intimate conversations with each other (Taylor, 1968), meaning that our experiments are an even stronger test of the potential benefits of distant social connections (Sandstrom & Dunn, 2014b). Second, a substantial body of literature examines how people make inferences about others' warmth (e.g., Cislak & Wojciszke, 2008; Fiske et al., 2007, 2002; Russell & Fiske, 2008; Todorov et al., 2009) but very little work examines the accuracy of these inferences. Our experiments test whether people systematically underestimate others' care and concern in the context of deep and meaningful conversations. Third, whereas ample research indicates that inferences about others' warmth impact *whether* people choose to engage with one another (e.g., Adolphs et al., 1998; Cuddy et al., 2007; Todorov, 2008; Wojciszke et al., 1998; see also Epley & Schroeder, 2014), our experiments enrich this literature by testing whether a related set of inferences influences *how deeply* people choose to engage. Our findings open new avenues for research about contexts that may remove psychological barriers to engaging deeply. Finally, whereas some experiments suggest that deep and intimate conversations can quickly foster experiences of connectedness between strangers (e.g., Aron et al., 1997; Fishman & Gardner, 2017), our experiments move substantially beyond prior research by trying to understand why people might be reluctant to engage in these conversations in the first place. Practically speaking, our research may offer useful guidance for people trying to behave more wisely to enhance their own wellbeing and strengthen their social relationships. Everyday conversations, we suggest, could be more superficial than would be optimal for one's own wellbeing.

To maximize statistical power, we recruited at least 50 participants or pairs per condition (Experiments 3, 5, 7a, and 7b), or at least 30 groups of four participants per condition (Experiments 6a and 6b), for experiments conducted in laboratory, field, and online settings, and recruited as many participants as we could in experiments conducted during presentations (Experiments 1a, 1b, 1c, 2, 4a, and 4b). To test the robustness of our effects, we also conducted multiple replication experiments (Experiments 1a–1c, 4a, and 4b). We report all measures and manipulations throughout the

article, and we report all analyses without exclusions in the [online supplemental materials](#). All experiments were approved by the university's Institutional Review Board and we obtained informed consent from all participants. The [online supplemental materials](#), surveys, data, and analysis script, as well as preregistrations for Experiments 1b, 2, 3, 4a, 4b, 5, 6a, 6b, 7a, 7b, and several supplemental experiments, can be accessed at tinyurl.com/overly-shallow-osf.

Experiments 1a–1c: Deep Conversations

We first tested whether people consistently underestimate how positively their deep conversations with strangers would unfold. In Experiments 1a, 1b, and 1c, we controlled the content of the conversations by providing deep and intimate discussion questions. We hypothesized that deep conversations between strangers would feel less awkward, and would lead to stronger bonds, greater liking, and greater happiness, than people anticipated. Although these experiments do not enable direct comparisons between shallow and deep conversations, they serve as initial tests of whether highly intimate conversations are more positive than strangers expect them to be. We test both shallow and deep conversations in the experiments that follow.

Furthermore, we began testing why people may misunderstand the outcomes of deep conversations. We predicted that strangers would underestimate how interested the other person would be during the conversation, and that this misunderstanding would help to explain why deep and intimate conversations unfold more positively than people expect.

We conducted these three experiments on meaningfully different samples of varying sizes to test the robustness and reliability of any experimental results. Experiment 1a included financial executives at a conference, 1b included managers and employees at a large financial services firm, and 1c included international MBA students participating from around the world in an online session. In all cases, the sample size was determined by the number of people who attended the session that comprised the experiment. Because of the similarity in both the procedures and results, we present the methods and results in detail only for Experiment 1a and report summaries of Experiments 1b and 1c in the main text. Full details of Experiments 1b and 1c are reported in the [online supplemental materials](#).

Method (Experiment 1a)

Participants

Twenty-five pairs of financial services executives were recruited during a session at a management conference ($N = 50$ individuals; $M_{\text{age}} = 48.92$; $SD_{\text{age}} = 7.55$; 18.00% female; 86.00% White). The executives entered the session unaware that they would be participating in any experiment.

Procedure

Participants opened a survey on their computers or mobile devices. They read that they would be randomly paired with another person attending the session who they had not met before and would answer and discuss four questions with the other person.

Participants then read four deep questions, adapted from the “fast friends” paradigm (Aron et al., 1997):

1. For what in your life do you feel most grateful? Tell the other participant about it.
2. If a crystal ball could tell you the truth about yourself, your life, your future, or anything else, what would you want to know?
3. If you were going to become a close friend with the other participant, please share what would be important for him or her to know.
4. Can you describe a time you cried in front of another person?

After reading the questions, participants reported their expectations of the upcoming interaction. First, participants reported how interested they would be in hearing the other person's answers (0 = *not at all interested*; 10 = *very interested*) and also how interested they expected the other person would be in hearing the participant's own answers (0 = *not at all interested*; 10 = *very interested*). Participants then predicted how awkward they would feel during the conversation (0 = *not at all awkward*; 10 = *very awkward*), how strong a bond they would feel with the other person (0 = *weak, like a stranger*; 10 = *strong, like a new friend*), how much they would like the other person (0 = *not at all*; 10 = *very much*), and how happy they would feel about the conversation with the other person (0 = *not at all happy*; 10 = *extremely happy*).

Research assistants then randomly paired participants together with someone they did not know in the session (most were unfamiliar with each other), and gave each participant a card containing their pair's ID number and the four discussion questions. Participants then had a conversation for approximately 10 min and returned to their original seats to fill out another survey asking them to report their actual experiences in the conversation. First, participants reported their own experiences using the same measures on which they reported their expectations before the conversation. They then reported their perceptions of their partner's experiences on these measures. Participants then thought about times when they had spoken with strangers and reported how often they wished they engaged in small talk with strangers, and how often they wished they engaged in deep conversations with strangers, on separate scales ranging from -5 (*much less often than I do now*) to 0 (*neither less nor more often than I do now*) to 5 (*much more often than I do now*). Finally, participants reported demographic information and were debriefed.

Results (Experiment 1a)

The strength-of-bond and liking items were highly correlated in both expectations ($\alpha = .82$) and experiences ($\alpha = .85$) and so we combined these items to form a connectedness scale. In this and the following experiments, we computed mean responses across paired participants for each of the primary measures and then performed analyses at the level of the dyad.

Participants underestimated both their own interest in hearing from the other person, *paired* $t(24) = -5.92$, $p < .001$, 95% CI_{difference} $[-2.29, -1.11]$, $d = -1.36$, and how interested they

would perceive their partner to be in hearing from them, *paired* $t(24) = -9.63$, $p < .001$, 95% CI_{difference} $[-3.38, -2.18]$, $d = -2.14$ (CI = confidence interval). Moreover, and consistent with our hypotheses, participants underestimated the extent to which their partners would be interested in the content of the conversation significantly more than they underestimated their own interest, $F(1, 24) = 14.63$, $p < .001$, $\eta_p^2 = .38$.¹

Our data suggest that these differences between participants' expectations and their own experiences reflect miscalibrated beliefs about a deep conversation rather than response biases that might arise in ratings of their partner's interest after the conversation. Specifically, participants' expectations of their partner's interest significantly underestimated both their partner's expected interest before the conversation, *paired* $t(24) = -8.68$, $p < .001$, 95% CI_{difference} $[-2.33, -1.43]$, $d = -1.36$, as well as their partner's self-reported interest after the conversation, *paired* $t(24) = -14.07$, $p < .001$, 95% CI_{difference} $[-4.11, -3.05]$, $d = -3.04$ (see [online supplemental materials](#) for further analyses).

Participants' conversations also unfolded significantly better than they anticipated: Participants overestimated how awkward they would feel, *paired* $t(24) = 8.71$, $p < .001$, 95% CI_{difference} $[2.44, 3.96]$, $d = 1.74$, underestimated how connected they would feel to their partner, *paired* $t(24) = -11.32$, $p < .001$, 95% CI_{difference} $[-2.34, -1.62]$, $d = -2.26$, and underestimated how happy they would feel about the conversation, *paired* $t(24) = -9.59$, $p < .001$, 95% CI_{difference} $[-2.99, -1.93]$, $d = -1.92$ (see [Figure 1](#), top panel).^{2,3}

We hypothesized that underestimating the other person's interest would explain miscalibration on the primary measures. To test this, we performed within-pairs mediational analyses using Measurement Phase (Expectation, Experience) as the independent variable, partner interest as the mediating variable, and each of the primary measures as dependent variables in separate analyses using the MEMORE macro (Montoya & Hayes, 2017). The indirect effects were significant for awkwardness ($b = -1.61$, 95% CI $[-3.08, -.04]$) and connectedness ($b = -.79$, 95% CI $[-1.58, -.13]$) but nonsignificant for happiness ($b = -.80$, 95% CI $[-1.97, .33]$).

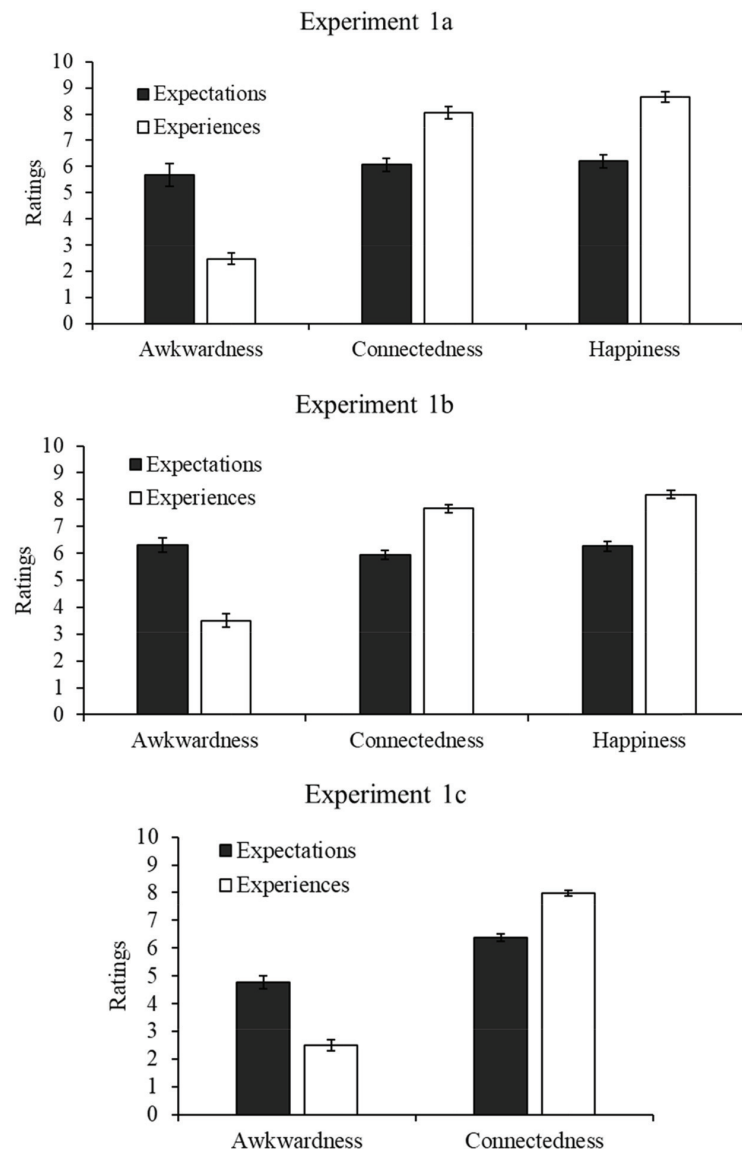
We also hypothesized that people want to engage in deeper conversations than they typically do. Consistent with this hypothesis, participants wished they engaged in marginally more small talk with strangers than they typically do ($M = .68$, $SD = 2.72$),

¹ For all experiments, we present critical hypothesis tests in the main text and report all other main effects and interaction effects from ANOVAs in the [online supplemental materials](#).

² We conducted exploratory analyses using the actor-partner interdependence model (Kenny et al., 2006) to test whether miscalibration between participants' expectations and experiences was more strongly associated with the participants' own expectations (as our theory would suggest) or their partners' expectations. Throughout our experiments, we found consistent evidence that miscalibration was associated with one's own expectations, but little evidence that miscalibration was associated with one's partner's expectations (see [online supplemental materials Table S2](#)).

³ We also performed exploratory analyses of gender. Throughout our experiments, neither miscalibration on the primary measures nor differences in miscalibration between shallower and deeper conversations varied reliably between same-gender and mixed-gender pairs (see [online supplemental materials](#) for details).

Figure 1
Mean Awkwardness, Connectedness, and Happiness Across Measurement Phase (Expectations Versus Experiences) in Experiments 1a–1c



Note. Error bars ± 1 SE.

one-sample $t(49) = 1.77$, $p = .083$, 95% CI $[-.09, 1.45]$, $d = .25$, but wished they engaged in significantly more deep conversation with strangers than they typically do ($M = 2.60$, $SD = 1.93$), one-sample $t(49) = 9.54$, $p < .001$, 95% CI $[2.05, 3.15]$, $d = 1.35$. Moreover, participants' desire for more deep talk was significantly stronger than their desire for more small talk, paired $t(49) = 3.88$, $p < .001$, 95% CI_{difference} $[.93, 2.91]$, $d = .55$. People may refrain from having more deep conversations in part because they underestimate how well these conversations will unfold.

Method and Results (Experiments 1b and 1c)

We also replicated these findings in Experiments 1b ($N = 50$ pairs) and 1c ($N = 56$ groups of 2–3 individuals; see [online supplemental materials](#) for the full method and results): Participants overestimated how awkward they would feel discussing deep topics with a stranger yet underestimated how connected they would feel to the other person and how happy they would feel about the conversation (see [Figure 1](#)). Experiment 1b also

included measures of the other person's care and interest. In this experiment, participants significantly underestimated the degree to which their partner would care about, and be interested in, the content of the conversation. The extent to which they did so statistically mediated the extent to which they underestimated their own feelings of connectedness and happiness in a deep conversation.

Experiment 2: Shallow Versus Deep Conversations

Experiments 1a–c suggest that relatively deep conversations between strangers tend to go better than expected. Specifically, participants felt less awkward, and felt happier and more connected to their partner, than they anticipated. These results were at least partly explained by participants' tendency to underestimate how caring and interested their partner would be in hearing what they had to say.

We suggest that the tendency to overestimate the conversation's awkwardness should be especially strong in deep conversations in which intimate self-disclosure is required, compared with relatively shallow conversations in which less intimate self-disclosure is required. We tested this hypothesis in Experiments 2–6b by manipulating the intimacy of conversation. In Experiment 2, we provided participants with a series of shallow or deep discussion questions, thereby manipulating the content of the conversation between pairs. We hypothesized that participants in the deep talk condition would overestimate how awkward their conversations would be more than participants in the shallow talk condition, and that participants in both conditions would underestimate how connected they would feel to their conversation partner.

Method

Participants

Eighty-nine pairs of master's degree students participated during a faculty-member presentation as part of a wellness event on campus ($N = 178$ individuals after exclusions; $M_{\text{age}} = 28.23$; $SD_{\text{age}} = 1.99$; 54.49% female; 53.37% White). Participants were unaware that they would be participating in an experiment until it was announced during the presentation. An additional seven participants could not be matched with their partner after the session because either one or three participants reported the same pair ID, and so were excluded from analyses. Because we analyzed the data at the level of the dyad rather than at the level of the individual, we did not reanalyze data with these participants included.

Procedure

Participants opened a survey on their computers or mobile devices and were randomly assigned to condition (signified by A or B) based on where they were seated in the room. Participants in group A read the following five shallow questions adapted from Aron et al. (1997):

1. When was the last time you walked for more than an hour? Describe where you went and what you saw.
2. How did you celebrate last Halloween?

3. Do you like to get up early or stay up late? Why?
4. What is the best TV show you've seen in the last month? Tell your partner about it.
5. How often do you get your hair cut? Where do you go? Have you ever had a really bad haircut experience?

Participants in Group B read the following five deep questions:

1. For what in your life do you feel most grateful? Tell your partner about it.
2. If a crystal ball could tell you the truth about yourself, your life, your future, or anything else, what would you want to know?
3. If you were going to become a close friend with your partner, please share what would be important for him or her to know.
4. What is one of the more embarrassing moments in your life?
5. Can you describe a time you cried in front of another person?

After reading the questions, participants predicted how awkward they would feel during the conversation, how uncomfortable, how much they would enjoy the conversation, how strong a bond they would feel with their conversation partner, how much they would like their conversation partner, and how well they would feel they got to know their conversation partner's "true beliefs, attitudes, preferences, and character," on similar 11-point scales as in Experiments 1a–1c. Participants were then randomly paired with someone from the same condition (shallow or deep) who they had not met before. Participants received question cards containing the five questions and were left to discuss the questions in pairs for about 10 min.

Participants then returned to their original seats and reported how they felt during their conversations on the same measures. To test whether deep conversation reduces momentary feelings of loneliness, participants then completed the three-item perceived loneliness scale (Hughes et al., 2004), reporting (a) how often they feel they lack companionship, (b) how often they feel left out, and (c) how often they feel isolated from others (*hardly ever* vs. *some of the time* vs. *often*). Because research has indicated that extraverts have better-calibrated beliefs about the benefits of extraverted social behavior than introverts (Zelenski et al., 2013), we then asked participants to complete the 10-item personality inventory (Gosling et al., 2003) to test whether calibration varies by personality. Finally, participants reported demographic information and were thanked and debriefed.

Results

The awkwardness and discomfort items were highly correlated ($\alpha_{\text{expectations}} = .98$, $\alpha_{\text{experiences}} = .77$), as were the enjoyment, strength of bond, liking, and perceived understanding items ($\alpha_{\text{expectations}} = .69$, $\alpha_{\text{experiences}} = .87$). We combined these items to

form awkwardness and connectedness scales, respectively. We then conducted 2 (Conversation: Shallow, Deep) $\times$ 2 (Measurement Phase: Expectations, Experiences) analyses of variance (ANOVAs) with repeated measures on the second factor and awkwardness and connectedness as dependent measures in separate analyses.

Awkwardness

Participants in the deep condition overestimated how awkward their conversation would feel more than did participants in the shallow condition, as indicated by a significant Conversation $\times$ Measurement Phase interaction effect, $F(1, 87) = 71.34, p < .001, \eta_p^2 = .45$ (see Figure 2). Participants in the shallow condition expected their conversations to feel less awkward than participants in the deep condition, $t(87) = 11.58, p < .001, 95\% \text{ CI}_{\text{difference}} [3.17, 4.48], d = 2.49$, and also experienced less awkwardness, $t(87) = 5.22, p < .001, 95\% \text{ CI}_{\text{difference}} [.84, 1.87], d = 1.12$. As predicted, the significant interaction indicates that participants in the deep condition ($d = 2.23$) overestimated how awkward their conversation would be more than did participants in the shallow condition ($d = .55$).

Connectedness

Participants in both the shallow and deep conditions underestimated how connected they would feel to their partner, as indicated by a significant main effect of Measurement Phase, $F(1, 87) = 98.24, p < .001, \eta_p^2 = .53$. The Conversation $\times$ Measurement Phase interaction effect was nonsignificant, $F(1, 87) = .12, p = .734, \eta_p^2 = .001$, indicating that participants underestimated how connected they would feel to their partner to similar degrees in the deep and shallow conditions.

Secondary Analyses

We also tested whether participants in the deep condition felt less lonely overall at the end of their conversations than participants in the shallow condition by coding the response options on the perceived loneliness scale (*Hardly ever* vs. *Some of the time* vs. *Often*) numerically from one to three. Unexpectedly, participants in the deep condition ($M = 1.82, SD = .35$) reported feeling

significantly more lonely than participants in the shallow condition ($M = 1.65, SD = .35$), $t(87) = 2.25, p = .027, 95\% \text{ CI}_{\text{difference}} [.02, .32], d = .48$. We discuss this finding further in the study discussion below.

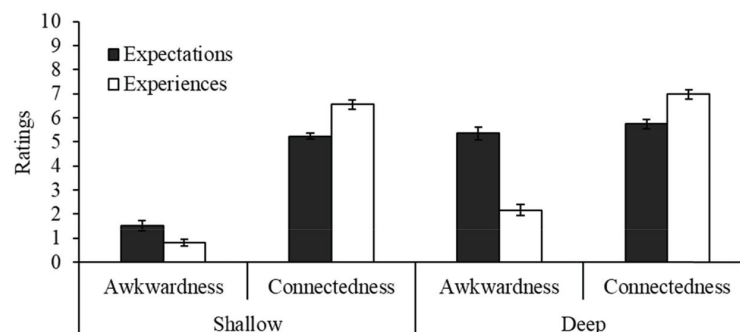
We also tested how our results might be moderated by personality by regressing expected versus experienced awkwardness and connection simultaneously over the Big Five personality traits, for the shallow and deep conditions separately. We did not observe consistent moderation: The tendency to overestimate the awkwardness of a conversation was associated with higher neuroticism ($\beta = -.26, t(98) = -2.58, p = .011$) among participants in the shallow condition but was not significantly associated with any Big Five traits among participants in the deep condition. Underestimating the sense of connection was associated with higher neuroticism ($\beta = .22, t(98) = 2.19, p = .031$) and lower openness ($\beta = -.21, t(98) = -2.16, p = .033$) among participants in the shallow condition but was not associated with any Big Five traits among participants in the deep condition. Our findings were not moderated by extraversion for either awkwardness or connectedness (see online supplemental materials for the full analyses). Personality did not consistently moderate the gap between expected and actual experience for either shallow or deep conversations.

Discussion

The results of this experiment replicate and extend the findings from Experiments 1a–1c: Participants' conversations felt less awkward, and led to greater feelings of connectedness, than the participants expected before engaging in the conversation. Furthermore, participants who engaged in deep conversations overestimated how awkward the conversation would be significantly more than those who engaged in shallow conversations. Although deep conversations did indeed feel more awkward than shallow conversations, the difference in participants' expectations was roughly four times larger than the difference that participants actually experienced.

One other finding warrants further discussion: In this experiment, participants in the deep condition reported feeling significantly lonelier than participants in the shallow condition after their conversations. We did not predict this result, but we are also reluctant to

Figure 2
Mean Awkwardness and Connectedness Across Conversation Conditions (Shallow Versus Deep) and Measurement Phase (Expectations Versus Experiences) in Experiment 2



Note. Error bars $\pm 1 \text{ SE}$.

conclude that this effect is a general consequence of deep conversations rather than an idiosyncratic consequence of the specific questions that participants discussed in this experiment. In particular, two of the deep questions, “What is one of the more embarrassing moments in your life?” and “Can you describe a time you cried in front of another person?” likely brought to mind memories of negative social experiences. These questions alone may have driven differences in reported loneliness. Because we are primarily interested in how connected people feel to their conversation partner, rather than more general feelings of loneliness, we did not include this measure in the following experiments but instead included measures that are more closely tied to experienced wellbeing from the conversation itself. Specifically, we measured participants’ feelings of happiness in Experiments 3–6. We also test a much wider range of questions in Experiments 3 and 5 to examine whether the effects observed in Experiment 2 generalize beyond the specific set of topics we asked participants to discuss.

Experiment 3: Deeper Conversations

Experiments 1a–2 indicated that deep conversations between strangers unfolded better than expected, and that participants are more likely to overestimate the awkwardness of deep conversations than shallow conversations. These results suggest that people might have what they perceive to be better conversations if they were willing to engage in deeper and more meaningful conversations in daily life. However, the preceding experiments do not directly test this potentially important practical conclusion for two reasons. First, we provided the conversation questions for participants. People may have more accurate beliefs about their conversations in daily life because they choose which topics to discuss. People may also be unable to generate deeper conversation topics on their own that would enhance their connections and wellbeing. Second, the preceding experiments lack a control condition to assess whether engaging in deeper conversations than one would normally engage in leads to better outcomes than expected. Assessing this is critical for understanding whether miscalibrated expectations could lead people to be overly shallow in conversation for their own wellbeing.

To address these limitations, participants in Experiment 3 wrote the questions that they later discussed with a stranger themselves. Participants first wrote a series of questions that they would normally discuss while getting to know someone new, and then wrote a series of questions that were deeper, involving topics that were more intimate than they would normally discuss. We then randomly assigned pairs to discuss the “control” questions or the deeper questions that one of the participants had generated. As in Experiments 1a–2, we predicted that participants would underestimate how positive these conversations would leave them feeling, and that participants in the deep condition would overestimate how awkward the conversation would feel compared with participants in the control condition. This experiment also enables us to test whether generating the topics for discussion oneself, versus discussing topics that another person generated, affects the expected or actual experience of relatively shallow or deep conversations.

Method

Participants

We targeted 100 pairs of participants and finished recruiting once that target was reached after data exclusions. We achieved this by recruiting 103 pairs of participants from separate university and community subject pools ($N = 200$ individuals after exclusions; $M_{\text{age}} = 28.46$; $SD_{\text{age}} = 13.67$; 49.00% female; 31.50% White) to complete the experiment in exchange for \$6. We excluded three of these pairs from analyses because one pair knew one another beforehand, because one pair began their conversation before one member had reported expectations, and because one participant did not write out conversation questions.

Procedure

Participants sat in separate rooms and did not interact with one another before their conversations. Participants were told that they would develop questions that they might later ask and answer during a discussion. Both participants first generated five *control* questions. Specifically, they were told:

We would like you to begin by generating five questions. These should be the types of questions that you would naturally ask another person while first getting to know him or her. Please select questions that you would actually be willing to ask and answer later in this study, and these questions should be the types of questions that you would typically ask while first getting to know somebody.

The same participants then generated five *deep* questions. They were told:

Next we would like you to generate five more questions. This time, please generate five questions that are deeper and more intimate than the types of questions that you would naturally ask another person while first getting to know him or her. In other words, we would like you to generate questions that go beyond the surface, beyond small talk, to probe deeper subject matter that might be more personal or emotional. For example, you might ask the person about important experiences they’ve had or activities they’ve enjoyed. You might ask the person to reveal something important about them. These questions should require both you and your partner to reveal something about yourselves that you might not normally reveal in a conversation with a stranger. These should be topics that you would be more likely, perhaps, to talk about with a close friend or family member, and they should dig deeper than the ones you wrote down in the previous set of questions.

Pairs were then randomly assigned to either the control condition or the deep condition. In the control condition, the experimenter selected one of the two sets of control questions at random, whereas in the deep condition, the experimenter selected one of the two sets of deep questions at random. The participant who wrote the randomly selected questions then sequenced them in the order they preferred for the conversation.

Both participants then viewed the final set of five discussion questions on a computer screen. The participant who did not write the final set of questions knew that the questions were written by the other participant but was not told whether they were viewing the control or deep questions. Participants then indicated how awkward they expected to feel during the conversation, how

uncomfortable, how much they expected to enjoy the conversation, how strong a bond they would feel with their conversation partner, how much they would like their conversation partner, how well they would feel they got to know their conversation partner's true beliefs, attitudes, preferences, and character, and how happy they would feel about their conversation on 11-point scales as in the prior experiments. Participants then predicted their partner's experiences on the same measures. The order of the awkwardness items (awkwardness, discomfort) and connectedness items (enjoyment, strength of bond, liking, and perceived understanding) was counterbalanced between pairs.

After reporting their expectations, participants entered the same study room, viewed the discussion questions, and began their conversations. Participants discussed each of the five questions sequentially until they reached their natural conclusions. When finished with their conversation, participants were again separated into individual rooms and reported their experiences in private. Participants first reported their own experiences on the same measures used before the conversation, and then they predicted their partners' responses on the same measures. Participants then completed the 10-item personality inventory (Gosling et al., 2003).

Finally, participants reported demographic information and were thanked and debriefed.

Results

The awkwardness items ($\alpha_{\text{expectations}} = .91$, $\alpha_{\text{experiences}} = .86$) and connectedness items ($\alpha_{\text{expectations}} = .94$, $\alpha_{\text{experiences}} = .94$) were highly correlated, and so we combined these items to form awkwardness and connectedness scales, respectively.

Manipulation Check

To check whether the intimacy manipulation was effective, we recruited a separate group of participants from MTurk ($N = 409$) to rate the intimacy of the control and deep discussion questions. The additional participants confirmed that the manipulation was effective: Participants discussed items that were rated as more intimate in the deep condition ($M = 6.28$, $SD = 1.50$) than in the control condition ($M = 4.74$, $SD = 1.67$), $t(96) = -4.81$, $p < .001$, 95% $CI_{\text{difference}} [-2.17, -.90]$, $d = -.97$ (see [online supplemental materials](#) for details).

We then conducted 2 (Conversation: Control, Deep) $\times$ 2 (Measurement Phase: Expectations, Experiences) ANOVAs with repeated measures on the second factor and awkwardness, connectedness, and happiness as dependent measures in separate analyses.

Awkwardness

Participants overestimated the awkwardness of their conversations somewhat more in the deep condition than the control condition, as evidenced by a marginally significant Conversation $\times$ Measurement Phase interaction effect, $F(1, 98) = 3.74$, $p = .056$, $\eta_p^2 = .04$ (see [Figure 3](#)). Planned contrasts indicated that participants overestimated how awkward their conversation would be both in the control condition, $\text{paired } t(49) = 4.13$, $p < .001$, 95% $CI_{\text{difference}} [.57, 1.65]$, $d = .58$, and in the deep condition, $\text{paired } t(49) = 6.65$, $p < .001$, 95% $CI_{\text{difference}} [1.30, 2.42]$, $d = .94$. However, participants in the deep condition also expected their conversations to feel more awkward than participants in the control condition, $t(98) = -2.26$, $p = .026$, 95% $CI_{\text{difference}} [-1.82, -.12]$, $d = -.45$, even though experiences of awkwardness did not differ significantly between conditions, $t(98) = -.60$, $p = .552$, 95% $CI_{\text{difference}} [-.95, .51]$, $d = -.12$.

Connectedness

Participants underestimated how connected they would feel after speaking with their partner, as indicated by a significant main effect of Measurement Phase, $F(1, 98) = 40.46$, $p < .001$, $\eta_p^2 = .29$. The Conversation $\times$ Measurement Phase interaction effect was nonsignificant, $F(1, 98) = .01$, $p = .936$, $\eta_p^2 = .0001$. Planned contrasts indicated that although participants underestimated how connected they would feel in both the control, $\text{paired } t(49) = -4.69$, $p < .001$, 95% $CI_{\text{difference}} [-1.44, -.57]$, $d = -.66$, and deep conditions, $\text{paired } t(49) = -4.32$, $p < .001$, 95% $CI_{\text{difference}} [-1.44, -.52]$, $d = -.61$, participants in the deep condition did expect to feel more connected to their partner than did participants in the control condition, $t(98) = -3.12$, $p = .002$, 95% $CI_{\text{difference}} [-1.58, -.35]$, $d = -.62$. In this respect, their expectations were calibrated at above-chance levels because participants in the deep condition did indeed feel significantly more connected to their

Figure 3
Mean Awkwardness, Connectedness, and Happiness Across Conversation Conditions (Control Versus Deep) and Measurement Phase (Expectations Versus Experiences) in Experiment 3



Note. Error bars ± 1 SE.

partner than did participants in the control condition, $t(98) = -2.33, p = .022, 95\% \text{ CI}_{\text{difference}} [-1.74, -.14], d = -.47$.

Happiness

As with the experience of connection, participants also underestimated how happy they would actually feel about their conversations, as indicated by a significant main effect of Measurement Phase, $F(1, 98) = 45.07, p < .001, \eta_p^2 = .32$. The Conversation $\times$ Measurement Phase interaction was nonsignificant, $F(1, 98) = 1.84, p = .179, \eta_p^2 = .02$. Planned contrasts indicated that participants underestimated how happy they would feel about the conversation in both the control, $\text{paired } t(49) = -3.79, p < .001, 95\% \text{ CI}_{\text{difference}} [-1.33, -.41], d = -.54$, and deep conditions, $\text{paired } t(49) = -5.70, p < .001, 95\% \text{ CI}_{\text{difference}} [-1.77, -.85], d = -.81$. Participants did not expect to feel differently in the control and deep conditions, $t(98) = -.73, p = .465, 95\% \text{ CI}_{\text{difference}} [-.85, .39], d = -.15$, but participants in the deep condition reported marginally greater happiness with the conversation when they were finished, $t(98) = -1.72, p = .088, 95\% \text{ CI}_{\text{difference}} [-1.44, .10], d = -.34$.

Secondary Analyses

The magnitude of miscalibration between expectations and experiences did not differ significantly between participants who wrote the final set of discussion questions (Writers) and those who did not (Receivers) on any measures, $F_s(1, 98) \leq 2.28, p_s \geq .134, \eta_p^2 \leq .02$, suggesting that choosing the topics to discuss does not meaningfully increase the accuracy of people's expectations about the outcomes of the conversation.

As in Experiment 2, our findings were not consistently moderated in any clear way by personality. Overestimating the conversation's awkwardness was not associated with any Big Five traits among participants in the control condition, but was associated with lower openness ($\beta = .45, t(94) = 4.34, p < .001$) among participants in the deep condition. Underestimating connectedness was not associated with any Big Five traits among participants in either the control condition or the deep condition. Underestimating happiness was associated with higher conscientiousness ($\beta = .23, t(94) = 2.01, p = .048$) among participants in the control condition but was not associated with any Big Five traits among participants in the deep condition. Because we did not observe consistent moderation of any of our results by personality in either Experiments 2 or 3, we did not collect measures of personality in the following experiments.

Discussion

Consistent with Experiments 1 and 2, participants in Experiment 3 overestimated how awkward and uncomfortable a deep conversation with a stranger would be, and also underestimated how connected they would feel to their conversation partner and how happy they would feel about the conversation afterward. Moreover, we again observed that participants tended to overestimate how awkward a deep conversation would be compared with the conversations they would typically have with a stranger. Although those who were having a deeper-than-normal conversation with a stranger expected the conversation to feel more awkward and uncomfortable than those who were having a typical

conversation, the deeper conversations were no more awkward in reality than the typical conversations.

These findings extend our previous experiments in three important ways. First, participants wrote and discussed their *own* questions, thereby replicating the primary results of Experiments 1a–2 across a broad range of ecologically valid conversation topics. Second, the gaps between expectations and experiences in these conversations did not differ meaningfully between participants who chose the discussion topics and those who did not, indicating that people may overestimate the awkwardness of meaningful conversations even when they design the conversations themselves. Third, this experiment suggests that people might have more positive conversations with strangers in daily life if they were willing to dive a little deeper than they normally would.

Finally, these results suggest that miscalibrated expectations, particularly about the awkwardness and discomfort of a deep conversation, may create a barrier to having the deeper conversations that participants in Experiments 1a–1c reported wishing they had more often. Even though participants in both the control and deep conditions underestimated how connected they would feel to their partner, participants in the deep condition did anticipate feeling more connected than did participants in the control condition. These participants seemed to recognize that a deeper conversation would strengthen their relational bonds with their partner, but mistakenly expected that it would also come with a cost of having a more awkward and uncomfortable conversation. We designed Experiments 4a–7b to test the mechanism underlying these miscalibrated expectations, and to examine how they might encourage conversation that is shallower than participants themselves might consider to be optimal.

Experiments 4a–4b: Underestimating Care

We hypothesized that people undervalue deep conversation at least partly because they underestimate how much others care about, and are interested in, learning the content that will be shared in the conversation itself. People have a fundamental need to feel connected to others (Baumeister & Leary, 1995), a need we are suggesting that people tend to underestimate in others, especially in strangers. Assuming that others are somewhat indifferent to the conversation could lead people to expect that a deep conversation would be especially awkward and uncomfortable, thereby encouraging people to avoid more deep and intimate conversations.

Experiments 1a–1b provided some support for this mechanism, but only included relatively deep conversations. We conducted a more comprehensive test in Experiments 4a and 4b by providing participants with either shallow or deep discussion questions and then asking them to predict how much they would care about the content of their own responses in the interaction, and also how much their partner would care about the participant's own responses. Participants also reported their expectations of how awkward the conversation would feel, how connected they would feel to their partner, and how happy they would feel about the conversation. After speaking, participants reported their actual experiences on the same measures. We predicted that participants would expect to care about the content of their own responses more than they would expect others to care. We also predicted that participants would underestimate how much others would care about the content of their conversation. Further, we also predicted that underestimating strangers' care and concern would mediate

participants' tendency to overestimate awkwardness, but underestimate connectedness and happiness, during the conversation.

Method (Experiment 4a)

Participants

We recruited 109 pairs of participants during a master's degree student orientation event ($N = 206$ individuals after exclusions; $M_{\text{age}} = 36.83$; $SD_{\text{age}} = 5.48$; 29.61% female; 39.32% White). We excluded six pairs from analyses because two pairs completed their conversations before reporting their expectations, two pairs included one participant who reported expectations about the wrong set of conversation questions, and two pairs included at least one participant who did not consent at the beginning of the session to have their data analyzed in published research. In addition, 14 participants could not be matched with their partner after the session because either one or three participants reported the same pair ID. We did not analyze data from these participants.

Procedure

The procedure was identical to Experiment 2 with two exceptions. First, we modified the discussion questions and reduced the total number of questions from five to four (due to time constraints in the experimental session). Participants in the shallow condition received the following questions:

1. What do you think about the weather today?
2. What do you think of the city of Chicago?
3. How did you celebrate last Halloween?
4. How often do you get your hair cut? Where do you go? Have you ever had a really bad haircut experience?

Participants in the deep condition received the following questions:

1. For what in your life do you feel most grateful? Tell your partner about it.
2. If a crystal ball could tell you the truth about yourself, your life, your future, or anything else, what would you want to know?
3. If you were going to become a close friend with your partner, please share what would be important for him or her to know.
4. Can you describe a time you cried in front of another person?

Second, we modified the dependent measures. Before meeting their conversation partners, participants reported how much they thought they would care about and feel concerned or interested in their own responses to the questions (0 = *not at all*; 10 = *quite a bit*) and also how much they thought their partner would care about and feel concerned or interested in the participant's responses (0 = *not at all*; 10 = *quite a bit*). These items allow us to test whether participants expect to care more about the content of

the conversation than their partner, and if so, whether this self/other caring gap would be especially pronounced in the deep condition. Participants then reported how awkward they would feel during the discussion, how strong of a bond they would feel with their partner, how much they would like their partner, and how happy they would feel about the conversation with their partner on 11-point scales as in the prior experiments. After reporting their expectations but before speaking, participants indicated how often they wished they would engage in small talk with strangers (−5 = *much less often than I do now*; 0 = *neither less nor more often than I do now*; 5 = *much more often than I do now*) and how often they wished they would engage in deep conversations with strangers (−5 = *much less often than I do now*; 0 = *neither less nor more often than I do now*; 5 = *much more often than I do now*). Participants then engaged in the conversations and reported their experiences on the same measures used for measuring their expectations.

Finally, participants reported demographic information and were thanked and debriefed.

Results (Experiment 4a)

The strength-of-bond and liking measures were highly correlated in both expectations ($\alpha = .84$) and experiences ($\alpha = .68$) and so we combined these items to form a connectedness scale.

Care Measures

As predicted, participants expected to care more about their own responses than their partner would, $F(1, 101) = 32.90$, $p < .001$, $\eta_p^2 = .25$. Further, this self/other caring gap was significantly larger in the deep condition than in the shallow condition: A 2 (Conversation: Shallow, Deep) $\times$ 2 (Target: Self, Partner) ANOVA on participants' expectations yielded a significant interaction, $F(1, 101) = 6.00$, $p = .016$, $\eta_p^2 = .06$. Although participants in the shallow condition expected to care significantly more about their responses to the questions ($M = 5.69$, $SD = 1.58$) than their partner would ($M = 5.11$, $SD = 1.56$), *paired* $t(51) = -2.60$, $p = .012$, 95% CI_{difference} $[-1.04, -.13]$, $d = -.36$, this gap was significantly larger among participants in the deep condition ($M_s = 7.53$ vs. 6.07, respectively; $SD_s = 1.24$ vs. 1.41), *paired* $t(50) = -5.26$, $p < .001$, 95% CI_{difference} $[-2.02, -.90]$, $d = -.74$.

Perhaps more important, comparisons with actual experience indicated that participants systematically underestimated how much they would actually perceive their partner to care about their responses. A 2 (Conversation: Shallow, Deep) $\times$ 2 (Measurement Phase: Expectations, Experiences) ANOVA on the partner care measure with repeated measures on the second factor produced a significant main effect of Measurement Phase, $F(1, 101) = 93.22$, $p < .001$, $\eta_p^2 = .48$, such that participants underestimated partner care. The Conversation $\times$ Measurement Phase interaction effect was nonsignificant, $F(1, 101) = .29$, $p = .591$, $\eta_p^2 = .003$, indicating that participants underestimated the recipients' care similarly in the deep and shallow conditions. Consistent with our hypotheses, participants also underestimated their partner's care significantly more than they underestimated their own, $F(1, 101) = 61.70$, $p < .001$, $\eta_p^2 = .38$.

We then conducted a series of 2 (Conversation: Shallow, Deep) $\times$ 2 (Measurement Phase: Expectations, Experiences)

ANOVAs with repeated measures on the second factor, separately for the awkwardness, connectedness, and happiness measures.

Awkwardness

Participants in the deep condition overestimated how awkward their conversation would feel significantly more than did participants in the shallow condition, as indicated by a significant Conversation $\times$ Measurement Phase interaction, $F(1, 101) = 4.30, p = .041, \eta_p^2 = .04$. Although participants overestimated how awkward the conversation would be in the shallow condition, *paired* $t(51) = 3.76, p < .001, 95\% \text{ CI}_{\text{difference}} [.51, 1.70], d = .52$, participants overestimated feelings of awkwardness significantly more in the deep condition, *paired* $t(50) = 6.44, p < .001, 95\% \text{ CI}_{\text{difference}} [1.37, 2.61], d = .90$ (see Figure 4, top panel).

Connectedness

Participants underestimated how connected they would feel across conditions, as evidenced by a significant main effect of Measurement Phase, $F(1, 101) = 144.32, p < .001, \eta_p^2 = .59$. Unexpectedly, the Conversation $\times$ Measurement Phase interaction effect was also significant, $F(1, 101) = 11.76, p < .001, \eta_p^2 = .10$: Although participants underestimated how connected they would feel in the deep condition, *paired* $t(50) = -6.85, p < .001, 95\% \text{ CI}_{\text{difference}} [-1.49, -.81], d = -.96$, they did so significantly more in the shallow condition, *paired* $t(51) = -9.94, p < .001, 95\% \text{ CI}_{\text{difference}} [-2.49, -1.65], d = -1.38$. Participants in the deep condition expected to feel more connected than did participants in the shallow condition, $t(101) = 5.43, p < .001, 95\% \text{ CI}_{\text{difference}} [.89, 1.91], d = 1.07$, and actually did feel more connected in the

deep condition than in the shallow condition, $t(101) = 2.46, p = .016, 95\% \text{ CI}_{\text{difference}} [.09, .86], d = .48$. The significant interaction indicates that these differences in expectation were larger ($d = 1.07$) than the differences in experience ($d = .48$).

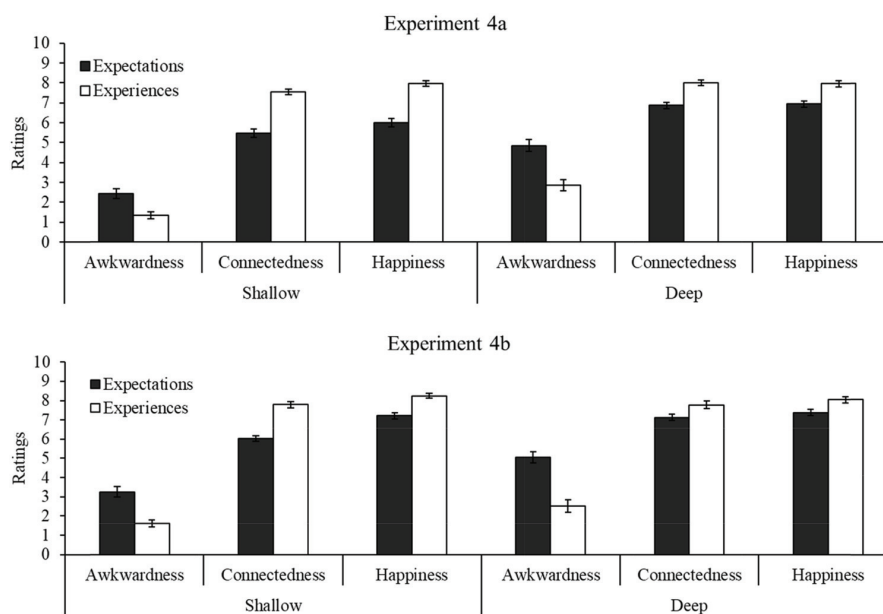
Happiness

Participants underestimated happiness across conditions, as evidenced by a significant main effect of Measurement Phase, $F(1, 101) = 130.18, p < .001, \eta_p^2 = .56$. Unexpectedly, the Conversation $\times$ Measurement Phase interaction effect was also significant for happiness, $F(1, 101) = 13.18, p < .001, \eta_p^2 = .12$: Although participants significantly underestimated how happy they would feel about the conversation in the deep condition, *paired* $t(50) = -6.09, p < .001, 95\% \text{ CI}_{\text{difference}} [-1.36, -.68], d = -.85$, they did so significantly more in the shallow condition, *paired* $t(51) = -9.80, p < .001, 95\% \text{ CI}_{\text{difference}} [-2.37, -1.57], d = -1.36$. Participants in the deep condition expected to feel happier about their conversation than did participants in the shallow condition, $t(101) = 3.55, p < .001, 95\% \text{ CI}_{\text{difference}} [.42, 1.47], d = .70$, but experienced happiness with the conversation did not vary by condition, $t(101) = -.05, p = .962, 95\% \text{ CI}_{\text{difference}} [-.43, .41], d = -.01$.

Mediational Analyses

We found only limited evidence that underestimating a partner's care could explain why participants overestimated how awkward and uncomfortable their interaction would be, while also underestimating how connected and happy they would feel following the conversation. We performed a series of within-pairs mediational analyses using Measurement Phase (Expectation, Experience) as

Figure 4
Mean Awkwardness, Connectedness, and Happiness Across Conversation Conditions (Shallow Versus Deep) and Measurement Phase (Expectations Versus Experiences) in Experiments 4a and 4b



Note. Error bars ± 1 SE.

the independent variable, partner care as the mediating variable, and awkwardness, connectedness, and happiness as dependent variables in separate analyses. In the shallow condition, the indirect effects were nonsignificant for awkwardness ($b = .19$, 95% CI $[-.26, .64]$), nonsignificant for connectedness ($b = -.44$, 95% CI $[-1.02, .03]$), and significant for happiness ($b = -.43$, 95% CI $[-.96, -.03]$). In the deep condition, the indirect effects were nonsignificant for awkwardness ($b = .14$, 95% CI $[-.32, .68]$), significant for connectedness ($b = -.47$, 95% CI $[-.89, -.17]$), and nonsignificant for happiness ($b = -.33$, 95% CI $[-.65, .06]$). Thus, Experiment 4a provides some evidence that misunderstanding how much others will care explains why deep conversations unfold more positively than people expect, but it does not provide strong evidence of this.

Desire for Shallow and Deep Conversation

Participants reported somewhat stronger desires to engage in deep conversation than shallow conversation with strangers. Participants reported that they wanted to engage in more small talk with strangers than they typically do ($M = 1.12$, $SD = 2.35$), $t(205) = 6.82$, $p < .001$, 95% CI $[.79, 1.44]$, $d = .47$, and also that they wanted to engage in more deep conversation with strangers than they typically do ($M = 1.48$, $SD = 2.12$), $t(205) = 9.99$, $p < .001$, 95% CI $[1.18, 1.77]$, $d = .70$. Participants' preference to engage in more deep conversation was marginally stronger than their preference to engage in more small talk, *paired* $t(205) = -1.90$, $p = .059$, 95% CI_{difference} $[-.73, .01]$, $d = -.13$. These results are important because they indicate that our participants would generally prefer interacting with others more, rather than less, suggesting that any reluctance to engage in deeper conversation than one normally would does not stem from participants' own disinterest in doing so. These preference ratings instead suggest a psychological barrier that may keep people from engaging as deeply with others as much as they might prefer.

Method and Results (Experiment 4b)

We conducted a replication experiment with only minor changes to the procedure ($N = 101$ pairs; see [online supplemental materials](#) for the full method and results). Experiment 4b largely replicated the results of Experiment 4a: Participants overestimated the awkwardness of their conversations marginally more in the deep condition than the shallow condition, $F(1, 99) = 3.69$, $p = .058$, $\eta_p^2 = .04$, but underestimated their connectedness significantly more in the shallow condition than the deep condition, $F(1, 99) = 17.96$, $p < .001$, $\eta_p^2 = .15$, and underestimated their happiness marginally more in the shallow condition, $F(1, 99) = 3.21$, $p = .076$, $\eta_p^2 = .03$ (see [Figure 4](#), bottom panel).

Experiment 4b also found somewhat stronger evidence that underestimating a partner's care could explain why people under-value the positive outcomes of their conversations. We conducted mediational analyses with Measurement Phase (Expectation, Experience) as the independent variable, partner care as the mediating variable, and each of the primary measures as dependent variables in separate analyses. In the shallow condition, the indirect effects were nonsignificant for awkwardness ($b = .35$, 95% CI $[-.31, .99]$), but significant for connectedness ($b = -.54$, 95% CI $[-1.02, -.19]$), and happiness ($b = -.36$, 95% CI $[-.63, -.17]$).

In the deep condition, the indirect effects were likewise nonsignificant for awkwardness ($b = .37$, 95% CI $[-.25, .92]$), but significant for connectedness ($b = -.53$, 95% CI $[-.93, -.14]$), and happiness ($b = -.39$, 95% CI $[-.89, -.06]$).

Discussion (Experiments 4a–4b)

Participants underestimated how positive they would feel in conversation with a stranger, expecting to feel more awkward and less connected and happy than they actually did. Consistent with the prior experiments, participants overestimated how awkward the conversation would feel to a greater extent in the deep conditions than in the shallow conditions. Participants underestimated how much others would care about the content of the conversation, but we found only mixed evidence that underestimating strangers' care helped to explain why participants underestimated the overall positivity of their conversations.

These experiments also revealed an unexpected pattern of results that we did not observe in Experiments 2 and 3. Although participants in the shallow condition expected to feel substantially less connected to one another than participants in the deep condition, participants in both conditions felt strongly connected after speaking. As a result, participants in the shallow condition underestimated connectedness *more* than participants in the deep condition. Anecdotal reports during the session debriefing indicated that participants in the shallow condition often turned what we intended to be relatively superficial conversations into deeper and more meaningful conversations than they had anticipated, meaning that our experimental manipulations were not as strong as intended. Although evaluations of intimacy differed significantly between the deep ($M = 7.18$, $SD = 1.61$) and shallow conditions ($M = 5.92$, $SD = 1.84$) in Experiment 4b, $t(64) = 2.95$, $p = .004$, 95% CI_{difference} $[.41, 2.11]$, $d = .73$, intimacy ratings even in the shallow condition exceeded the midpoint of the scale, *one-sample* $t(32) = 2.88$, $p = .007$, 95% CI $[5.27, 6.58]$, $d = .50$. Instead of being limited to the questions that we provided, which would have guided people's expectations, actual conversations seemed to drift in a more meaningful direction than people may have anticipated based on the questions alone. We think this is a potentially interesting and unexpected consequence in some conversations, which might help to explain why conversations with strangers can be surprisingly positive (Epley & Schroeder, 2014). We will discuss this possibility in greater detail in the General Discussion.

Experiment 5: Manipulating Perceived Care via Relationships

Experiments 1a–4b suggest that people expect deeper conversations to create stronger connections than shallow conversations, but also that deeper conversations will be relatively awkward and uncomfortable. These experiments also indicate that these expectations are somewhat miscalibrated, such that people underestimate how connected they will feel to their partners and overestimate how awkward and uncomfortable their deep conversations will be. However, Experiments 4a and 4b provide only mixed evidence that miscalibrated expectations about the consequences of deep conversation stem from underestimating others' care and interest in learning more intimate information about oneself. Perhaps more important, correlational analyses of mediation do not test the

causal influence of a mediator, which only an experimental approach to testing mediation can do. We designed Experiment 5 to provide a causal test of the importance of a partner's perceived care and interest by manipulating it directly through the strength of an existing social relationship. Specifically, we asked participants to have a conversation with either a distant stranger or with a close other who would already be known to care about one's responses to intimate conversation topics, including a friend, family member, or romantic partner. We predicted that participants would be less likely to underestimate a close other's interest compared with a distant stranger's interest, and would also be more calibrated when predicting feelings of awkwardness, enjoyment, and happiness before speaking with a close other compared with a distant stranger.

We also designed Experiment 5 to address a potential methodological concern. In the previous experiments, participants did not see their partner before reporting their expectations, and so it is possible that they imagined meeting an atypical stranger who would be even less interested in the conversation than the stranger they were later paired with. We theorize instead that people underestimate how much even a *typical* stranger will care about the content of a conversation. To address this concern, participants in Experiment 5 were able to see their partner in the stranger condition at the start of the study session. We still predicted, consistent with the previous experiments, that participants in the "stranger" condition would underestimate their partner's interest and underestimate how positively their conversations would unfold.

Method

Participants

We targeted 200 pairs of participants and finished recruiting once that target was reached after data exclusions. We achieved this by recruiting 204 pairs of participants from several public parks ($N = 400$ individuals after exclusions; $M_{\text{age}} = 35.27$; $SD_{\text{age}} = 16.21$; 61.50% female; 61.50% White) to complete the study in exchange for a \$5 gift card. We excluded four of these pairs from analyses because both participants in one pair answered their phones during the conversation, and because participants in three pairs discussed the dependent measures while responding to those measures. Among 200 participants in the "close other" condition, 31.50% reported that they were friends, 24.50% reported that they were spouses, 21.50% reported that they were dating, 17.00% reported that they were family members, 3.00% reported that they were acquaintances, 2.00% reported that they were colleagues, and .50% did not report the nature of their relationship.

Procedure

Experimenters recruited either pairs of distant strangers who had never met one another or pairs of close friends, family, or partners who were visiting the park together. Participants in both the close and distant conditions saw their conversation partner at the beginning of the experiment before receiving instructions. After providing informed consent, participants in the close conditions reported how close or connected they currently felt to the other person (0 = *not close at all*; 10 = *extremely close*).

In both conditions, participants were separated and were then told by different experimenters that they would develop a set of discussion

questions that they might later ask and answer with the other participant. Following a similar procedure to that used in Experiment 3, participants first generated two control questions, and then were asked to generate two deeper questions. The instructions in the distant stranger were nearly identical to those used in Experiment 3, while the instructions in the close other condition asked participants to write questions that they typically discuss with this person (control) or that were deeper than they normally discuss with this person (see the [online supplemental materials](#) for complete instructions).

The procedure was then largely identical to that of Experiment 3, except that we included slightly different dependent variables given that participants in the close condition were already acquainted and connected with each other. In particular, participants first reported how much they would care about and feel concerned or interested in their own responses, and how much their partner would care about and feel concerned or interested in the participant's responses, on separate scales. Participants then reported how awkward they would feel during the discussion, how much they would enjoy the conversation, and how happy they would feel about the conversation, on 11-point scales as in the prior experiments. The awkwardness and enjoyment items were counterbalanced between pairs. As a manipulation check, participants then viewed the control questions and the deep questions that they had written earlier—regardless of whether their own questions or their partner's questions were selected for the discussion—and separately rated the intimacy of each pair of questions (0 = *not intimate at all*; 10 = *extremely intimate*).

Participants then viewed the discussion questions and began their conversations as in Experiment 3, and then reported their experiences on the same measures used to measure their expectations before the conversation. As a second manipulation check, participants also reported how intimate their conversation was (0 = *not at all intimate*; 10 = *extremely intimate*).

Finally, participants reported demographic information and received their compensation.

Results

Manipulation Checks

The intimacy manipulation was effective. Participants reported that their questions were less intimate in the control conditions than in the deep conditions, $F(1, 196) = 214.30$, $p < .001$, $\eta_p^2 = .52$, and this pattern did not differ depending on whether they were distant strangers or close others, $F(1, 196) = .61$, $p = .436$, $\eta_p^2 = .003$. After the conversation, participants likewise reported having less intimate conversations in the control conditions than in the deep conditions, $F(1, 196) = 63.05$, $p < .001$, $\eta_p^2 = .24$, again regardless of whether they were distant strangers or close others, $F(1, 196) = .20$, $p = .658$, $\eta_p^2 = .001$. Participants also reported having deeper conversations with close others than with distant strangers, $F(1, 196) = 10.48$, $p = .001$, $\eta_p^2 = .05$.

Care Measures

As anticipated, participants expected to care about their own responses more than their partner would across experimental conditions, $F(1, 196) = 6.73$, $p = .010$, $\eta_p^2 = .03$. Furthermore, this self/other caring gap was significantly larger in the deep conditions

than in the control conditions, as we observed in Experiment 4. Specifically, a 2 (Conversation: Control, Deep) $\times$ 2 (Relationship: Distant, Close) $\times$ 2 (Target: Self, Partner) ANOVA on participants' expectations yielded a significant Conversation $\times$ Target interaction, $F(1, 196) = 8.86, p = .003, \eta_p^2 = .04$. Participants in the deep conditions expected to care more about their responses to the questions than their partner would, $F(1, 98) = 19.11, p < .001, \eta_p^2 = .16$, but participants in the control conditions did not, $F(1, 98) = .06, p = .805, \eta_p^2 = .001$.

More important for the unique contribution of this experiment, pairs in the distant conditions underestimated each other's care more than did pairs in the close conditions. A 2 (Conversation: Control, Deep) $\times$ 2 (Relationship: Distant, Close) $\times$ 2 (Measurement Phase: Expectations, Experiences) ANOVA on the partner care measure with repeated measures on the third factor produced a significant Relationship $\times$ Measurement Phase interaction effect, $F(1, 196) = 55.84, p < .001, \eta_p^2 = .22$. Although participants who spoke with close others underestimated how much their partner would care about their responses, $F(1, 98) = 4.13, p = .045, \eta_p^2 = .04$, those who spoke with distant strangers did so significantly more, $F(1, 98) = 156.61, p < .001, \eta_p^2 = .62$.

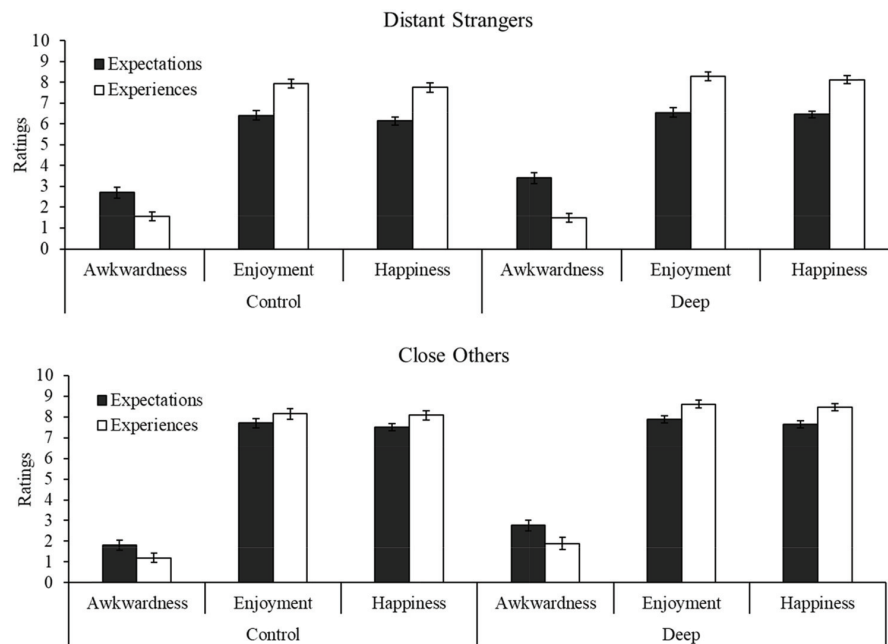
We next report a series of 2 (Conversation: Control, Deep) $\times$ 2 (Relationship: Distant, Close) $\times$ 2 (Measurement Phase: Expectations, Experiences) ANOVAs with repeated measures on the third factor, separately for the awkwardness, enjoyment, and happiness measures.

Awkwardness

Participants in the deep conditions overestimated how awkward their conversations would be more than did participants in the control conditions, as revealed by a significant Conversation $\times$ Measurement Phase interaction effect, $F(1, 196) = 4.94, p = .027, \eta_p^2 = .02$. We also observed a significant Relationship $\times$ Measurement Phase interaction effect, $F(1, 196) = 11.05, p = .001, \eta_p^2 = .05$ (see Figure 5): Although participants in the close conditions overestimated how awkward and uncomfortable their conversations would feel, $F(1, 98) = 19.36, p < .001, \eta_p^2 = .16$, participants in the distant conditions did so significantly more, $F(1, 98) = 86.34, p < .001, \eta_p^2 = .47$.

Analyses of simple effects within this interaction indicated that among distant strangers, participants in the deep condition expected that their conversations would feel marginally more awkward than those in the control condition, $t(98) = -1.88, p = .062, 95\% \text{ CI}_{\text{difference}} [-1.46, .04], d = -.38$, but did not feel significantly different in experience ($M_s = 1.49$ vs. 1.56, respectively; $SD_s = 1.50$ vs. 1.52), $t(98) = .23, p = .817, 95\% \text{ CI}_{\text{difference}} [-.53, .67], d = .05$. Among close others, participants in the deep condition likewise expected their conversations to feel more awkward than did those in the control condition, $t(98) = -2.58, p = .011, 95\% \text{ CI}_{\text{difference}} [-1.68, -.22], d = -.52$, but felt only marginally more awkward in actual experience ($M_s = 1.88$ vs. 1.20, respectively; $SD_s = 2.10$ vs. 1.52), $t(98) = -1.86, p = .066, 95\% \text{ CI}_{\text{difference}} [-1.41, .05], d = -.37$. Once again, deep conversations were not as awkward and uncomfortable as expected.

Figure 5
Mean Awkwardness, Enjoyment, and Happiness Across Conversation Conditions (Control Versus Deep), Relationship (Distant vs. Close) and Measurement Phase (Expectations Versus Experiences) in Experiment 5



Note. Error bars ± 1 SE.

Enjoyment

As predicted, participants underestimated how much they would enjoy their conversations across conditions, as indicated by a significant main effect of Measurement Phase, $F(1, 196) = 135.31$, $p < .001$, $\eta_p^2 = .41$. More important, we also observed a significant Relationship $\times$ Measurement Phase interaction effect, $F(1, 196) = 29.58$, $p < .001$, $\eta_p^2 = .13$: Although participants in the close conditions underestimated how much they would enjoy their conversations, $F(1, 98) = 21.45$, $p < .001$, $\eta_p^2 = .18$, participants in the distant conditions underestimated their enjoyment significantly more, $F(1, 98) = 131.76$, $p < .001$, $\eta_p^2 = .57$. Neither the main effect of Conversation, nor interactions with Conversation, were significant, $F_s(1, 196) \leq 2.15$, $p_s \geq .144$, $\eta_p^2_s \leq .01$, indicating that participants expected and experienced similar enjoyment in the control and deep conditions.

Happiness

Participants underestimated how happy they would feel about their conversations across conditions, as indicated by a significant main effect of Measurement Phase, $F(1, 196) = 188.47$, $p < .001$, $\eta_p^2 = .49$. More important, we also observed a significant Relationship $\times$ Measurement Phase interaction effect, $F(1, 196) = 29.96$, $p < .001$, $\eta_p^2 = .13$: Although participants in the close conditions underestimated how happy they would feel about their conversations, $F(1, 98) = 34.31$, $p < .001$, $\eta_p^2 = .26$, participants in the distant conditions did so significantly more, $F(1, 98) = 183.11$, $p < .001$, $\eta_p^2 = .65$. Neither the main effect of Conversation, nor interactions with Conversation, were significant, $F_s(1, 196) \leq 3.28$, $p_s \geq .072$, $\eta_p^2_s \leq .02$, indicating that participants expected and experienced similar levels of happiness in the control and deep conditions.

Mediational Analyses

We predicted that participants would overestimate awkwardness, and underestimate their enjoyment and happiness, because they would underestimate how much their partner would care about one's responses. We did not observe support for these hypotheses in the control conditions, but observed stronger support in the deep conditions.

Specifically, we performed a series of within-pairs mediational analyses with Measurement Phase (Expectation, Experience) as the independent variable and partner care as the mediating variable. Among participants in the control condition who spoke with distant strangers, the indirect effects were nonsignificant for awkwardness ($b = .25$, 95% CI $[-.25, .82]$), nonsignificant for enjoyment ($b = -.30$, 95% CI $[-.76, .19]$), and nonsignificant for happiness ($b = -.31$, 95% CI $[-.63, .05]$). Among participants in the control condition who spoke with close others, the indirect effects were nonsignificant for awkwardness ($b = .02$, 95% CI $[-.03, .24]$), nonsignificant for enjoyment ($b = -.07$, 95% CI $[-.41, .09]$), and nonsignificant for happiness ($b = -.06$, 95% CI $[-.29, .11]$).

Among participants in the deep condition who spoke with distant strangers, the indirect effects were significant for awkwardness ($b = .88$, 95% CI $[.36, 1.44]$), nonsignificant for enjoyment

($b = -.28$, 95% CI $[-1.13, .51]$), and significant for happiness ($b = -.46$, 95% CI $[-.98, -.12]$). Among participants in the deep condition who spoke with close others, the indirect effects were nonsignificant for awkwardness ($b = -.004$, 95% CI $[-.25, .19]$), significant for enjoyment ($b = -.21$, 95% CI $[-.50, -.03]$), and significant for happiness ($b = -.14$, 95% CI $[-.36, -.02]$). People may underestimate the positivity of deep conversations in part because their conversation partners are more caring and interested than people anticipate.

Furthermore, underestimating others' care helped to explain why participants who spoke with distant strangers were more likely to underestimate enjoyment and happiness than those who spoke with close others. We performed a series of between-pairs mediational analyses with Relationship (Close, Distant) as the independent variable, underestimation of partner care as the mediating variable, and the magnitude of miscalibration for each of the primary measures as dependent variables in separate analyses, using the PROCESS macro (Hayes, 2013). Among participants in the control conditions, the indirect effects were nonsignificant for awkwardness ($b = .27$, 95% CI $[-.04, .69]$), significant for enjoyment ($b = -.57$, 95% CI $[-.97, -.16]$), and significant for happiness ($b = -.54$, 95% CI $[-.88, -.24]$). Among participants in the deep conditions, the indirect effects were also nonsignificant for awkwardness ($b = .34$, 95% CI $[-.004, .78]$), significant for enjoyment ($b = -.41$, 95% CI $[-.91, -.003]$), and significant for happiness ($b = -.37$, 95% CI $[-.71, -.14]$). People's expectations of conversations with close others may be more calibrated because they more correctly recognize how much close others will care about the content of their conversation.

Secondary Analyses

Consistent with Experiment 3, the primary results did not differ meaningfully between Writers (who wrote the final set of discussion questions) and Receivers (who did not). A series of 2 (Conversation: Control, Deep) $\times$ 2 (Relationship: Distant, Close) $\times$ 2 (Measurement Phase: Expectations, Experiences) $\times$ 2 (Role: Writer, Receiver) ANOVAs on awkwardness, enjoyment, and happiness with repeated measures on the third and fourth factors yielded nonsignificant Measurement Phase $\times$ Role interaction effects for awkwardness, $F(1, 196) = 3.50$, $p = .063$, $\eta_p^2 = .02$, enjoyment, $F(1, 196) = 1.94$, $p = .166$, $\eta_p^2 = .01$, and happiness, $F(1, 196) = .31$, $p = .578$, $\eta_p^2 = .002$. People seem to underestimate the positive outcomes of their conversations even when they generate the topics themselves.

Discussion

Experiment 5 reveals that people are more calibrated anticipating how much close friends, family members, and partners will care about their conversation. As a result, people are also more calibrated predicting how awkward, enjoyable, and happy they will feel in the conversation with close others compared with distant strangers. As we observed in prior experiments, people overestimate how awkward deep conversations with strangers will be more than typical conversations, but underestimate how enjoyable and happy they will feel about both typical and deeper conversations. We did not measure connectedness in Experiment 5, which sometimes varied by conversation content in prior experiments,

because we directly manipulated social connection across conditions in this experiment.

Because people expect close others to be relatively more caring and interested than distant strangers, our theory also predicted that people would prefer to have deeper conversations with close others. The data from Experiment 5 allow us to begin testing this hypothesis because participants in the control conditions discussed questions that they would typically discuss with their conversation partner (close others) or that they typically discuss while getting to know somebody new (distant strangers). In these control conditions, participants who spoke with close others ($M = 3.70$, $SD = 2.65$) reported that their conversation topics were more intimate than those who spoke with distant strangers ($M = 2.50$, $SD = 2.40$), $t(98) = 2.37$, $p = .020$, 95% $CI_{\text{difference}} [.20, 2.20]$, $d = .47$. After the conversation, participants who spoke with close others ($M = 5.03$, $SD = 2.46$) also reported marginally more intimate conversations than those who spoke with distant strangers ($M = 4.21$, $SD = 2.22$), $t(98) = 1.75$, $p = .083$, 95% $CI_{\text{difference}} [-.11, 1.75]$, $d = .35$. People may engage in deeper conversations with others who they perceive to be caring and interested. Underestimating distant strangers' care may create a barrier to having deeper and more intimate conversations.

Of course, Experiment 5 was not designed to test whether people prefer to have deeper conversations with close others than distant strangers. We conducted a supplementary experiment on MTurk ($N = 109$) in which participants imagined visiting the lab for a conversation with either a close friend or a distant stranger. Participants viewed a list of 20 pretested discussion questions (see Appendix) and selected the five questions they preferred to discuss with the other person. Participants in the "friend" condition ($M = 3.10$, $SD = 1.51$) chose a greater number of deep questions than participants in the "stranger" condition ($M = 1.79$, $SD = 1.32$), $t(107) = 4.82$, $p < .001$, 95% $CI [.77, 1.84]$, $d = .92$, and likewise selected questions higher in average intimacy ($M = 5.04$, $SD = 1.24$) than did participants in the stranger condition, ($M = 3.97$, $SD = 1.10$), $t(107) = 4.76$, $p < .001$, 95% $CI_{\text{difference}} [.62, 1.51]$, $d = .91$. Furthermore, participants who imagined speaking with a close friend reported significantly greater interest in discussing the deep questions ($M = 7.00$, $SD = 1.64$), $t(107) = 4.28$, $p < .001$, 95% $CI_{\text{difference}} [.83, 2.26]$, $d = .82$, and expected the other person to care more about one's own responses to the deep questions ($M = 7.11$, $SD = 1.42$), $t(107) = 3.67$, $p < .001$, 95% $CI_{\text{difference}} [.56, 1.88]$, $d = .70$, compared with participants who imagined speaking with a distant stranger ($M_s = 5.45$ & 5.89 , respectively; $SD_s = 2.08$ & 1.98 ; see online supplemental materials for the full method and results).

These findings provide further evidence that people refrain from having deep and intimate conversations when they are concerned that another person will be uncaring and indifferent toward the conversation, and suggest that underestimating strangers' care may create a psychological barrier to having deeper conversations with distant others. Experiments 7a-7b will test whether removing this barrier encourages people to choose deeper conversation topics.

Experiments 6a–6b: Engaging in Shallow and Deep Conversations

Our data thus far reveal that participants overestimate the awkwardness of deep conversations more than shallow ones, and expect a wide range of conversations to lead to weaker

connections and less happiness than they do. However, two limitations of the previous designs have hindered our ability to test for differences in experiences between shallow and deep conversations. We address both limitations in the following experiments. First, participants have rated their experiences near the ceilings of our connectedness scales: Participants tend to feel highly connected to their conversation partner after a shallow or deep conversation. We address this limitation in Experiments 6a and 6b by instructing participants to engage in a shallow conversation with one stranger and a deep conversation with another stranger, enabling clearer comparisons of their connections to two different partners. We hypothesized that participants would report feeling more connected to their deep conversation partner.

Second, in the prior experiments, we included both positive measures of partner care, connectedness, and happiness, and negative measures of awkwardness. People perceive their conversation partner to be more caring during deep conversations, and at times feel happier and more connected to the person, but they have also felt more awkward during deep conversations in some experiments. This mix of positive and negative experiences does not indicate whether participants themselves prefer their overall experiences in deep conversation relative to shallow conversation, nor whether engaging in these conversations would affect their preference for future shallow versus deep conversations. To address these limitations, participants in Experiment 6b engaged in both types of conversations and then indicated which conversation they preferred. We hypothesized that participants would tend to prefer their deep conversations.

Method (Experiment 6a)

Participants

We recruited 30 groups of four participants ($N = 120$ individuals; $M_{\text{age}} = 28.33$; $SD_{\text{age}} = 11.89$; 65.00% female; 39.17% White). Among these, 10 groups were recruited during an event advertised as "Dinner and a Study Night" in exchange for \$10 and dinner, and 20 groups were recruited through the university's Virtual Lab using the Zoom video conferencing software, in exchange for an \$8 digital gift card, due to the coronavirus disease 2019 (COVID-19) pandemic. Two groups were excluded from analyses: In one group, the participants engaged in their second conversation before reporting expectations, and in the other, Internet connection problems prevented the participants from finishing their conversations (see online supplemental materials for the analyses including these groups). In addition, another six groups were removed from analyses and were not analyzed: In four groups, one participant typed in the wrong condition code and reported expectations about the wrong topics before each conversation, and in two groups, one participant typed in the wrong group ID and could not be matched in the data with their group members.

Procedure

Participants were randomly assigned to one of four roles (A, B, C, or D) to determine whom they would speak with during each round of conversation. Participants were then informed that they were about to speak with another person who they had never met before. They then read the three conversation questions. In the shallow-first counterbalance, participants read the following questions:

1. How is your day going so far?
2. What do you think about the weather today?
3. How often do you come here?⁴

In the deep-first counterbalance, participants instead read the following questions:

1. For what in your life do you feel most grateful? Please tell me about it.
2. If you could undo one mistake you have made in your life, what would it be and why would you undo it?
3. Can you tell me about one of the last times you cried in front of another person?

Participants then reported their expectations about the conversation, including how much they would care about and feel concerned or interested in their own responses, how much their partner would care about and feel concerned or interested in one's responses, how awkward they would feel while speaking with the other person, how strong of a bond they would experience with the other person, how much they would like the other person, and how happy they would feel after the discussion, on 11-point scales as in the prior experiments.

Participants were then paired with another group member (A with D; B with C) for the discussion. Because anecdotal evidence suggested that participants in the prior experiments discussed content outside the scope of the conversation questions, potentially weakening the intimacy manipulations, the experimenter instructed participants not to drift off-topic while discussing the questions. After their conversations, participants reported their actual experiences on the same measures described above. Participants also reported how intimate the conversation was (0 = *light conversation and small talk*; 10 = *meaningful conversation and deep talk*) and how negative or positive the topics they discussed were (−5 = *very negative*; 0 = *equally positive and negative*; 5 = *very positive*).

Participants were then informed that they would discuss a new set of conversation questions with a different person who they had not met before. Participants in the shallow-first counterbalance now read the deep questions, while those in the deep-first counterbalance now read the shallow questions. Participants reported their expectations, engaged in their conversations (A with C; B with D), and reported their experiences on the same measures described above. After finishing the second conversation, participants additionally reported which person they felt more connected to (−5 = *I feel much more connected to the FIRST person*; 0 = *I feel equally connected to BOTH people*; 5 = *I feel much more connected to the SECOND person*), then indicated how intimate their typical conversations with strangers are versus how intimate they wished these conversations would be on separate scales. Participants recruited to the Virtual Lab then indicated whether they had trouble seeing or hearing the other participants during their conversations over Zoom.

Finally, participants completed demographic items and were thanked and debriefed.

Method (Experiment 6b)

Participants

We recruited 30 groups of four participants ($N = 120$ individuals; $M_{\text{age}} = 26.01$; $SD_{\text{age}} = 9.15$; 61.67% female; 25.83% White) in exchange for a \$7 digital gift card through the university's Virtual Lab.

Procedure

The procedure was identical to Experiment 6a with several exceptions. First, after providing informed consent, participants immediately read both sets of conversation questions and then indicated which conversation they thought they would prefer (−5 = *will strongly prefer Conversation A*; 0 = *will equally prefer both conversations*; 5 = *will strongly prefer Conversation B*). Second, we removed the remaining expectation items before each conversation (care, awkwardness, connectedness, and happiness). We did this because participants in our prior experiments may have anchored their experienced awkwardness ratings on their earlier expectations, potentially exaggerating differences in actual awkwardness between shallow and deep conversations. Third, we included three additional experience items after each conversation in which participants indicated their interest in being friends with the person they spoke with: specifically, how interested they would be in speaking with the other person again outside the lab (0 = *not at all*; 10 = *very*), how much they would have to talk about with this person outside the lab (0 = *nothing at all*; 10 = *quite a bit*), and how strong a friend they would become upon getting to know this person outside the lab (0 = *weak, like a stranger*; 10 = *strong, like a close friend*).

Finally, after reporting their experiences for both conversations, participants completed two items about their preferences for shallow versus deep conversation. They first thought about the two conversations they just engaged in and indicated which conversation they preferred (−5 = *strongly preferred the FIRST conversation*; 0 = *equally preferred both conversations*; 5 = *strongly preferred the SECOND conversation*). They then imagined participating in a future experiment in which they would discuss the same two sets of questions with two different strangers who they had never met before. Participants reread both sets of questions and indicated which future conversation they thought they would prefer (−5 = *will strongly prefer Conversation A*; 0 = *will equally prefer both conversations*; 5 = *will strongly prefer Conversation B*).

Results (Experiment 6a)

The strength-of-bond and liking items were highly correlated for both the shallow ($\alpha_{\text{expectations}} = .77$, $\alpha_{\text{experiences}} = .72$) and deep ($\alpha_{\text{expectations}} = .80$, $\alpha_{\text{experiences}} = .68$) conversations, and so we collapsed these items to form a connectedness scale. The results described below were not qualified by significant interactions with study location (dinner event vs. Virtual Lab) and so we pooled the data across both locations.

⁴ After moving the study to our "Virtual Lab" during the COVID-19 pandemic, we changed the third conversation question to, "How often do you participate in research studies?"

Manipulation Check

The intimacy manipulation was effective: Participants reported that their deep conversations ($M = 6.37$, $SD = 2.19$) were significantly more intimate than their shallow conversations ($M = 3.08$, $SD = 2.64$), *paired* $t(119) = -11.84$, $p < .001$, 95% CI_{difference} $[-3.84, -2.74]$, $d = -1.35$.

Care Measures

Replicating the prior experiments, participants expected to care more about their own responses than their partner would, $b = 1.51$, $SE = .14$, $t(298.19) = 10.49$, $p < .001$, 95% CI $[1.23, 1.79]$. Further, this self or other caring gap was significantly larger for deep conversations than shallow conversations. A mixed linear model with fixed-effects terms for Conversation (Shallow, Deep), Target (Own Care, Partner Care), and their interaction, and random intercepts for the participant and the partner, yielded a significant Conversation $\times$ Target interaction, $b = .97$, $SE = .29$, $t(298.19) = 3.36$, $p < .001$, 95% CI $[.40, 1.53]$: Although participants expected to care significantly more about their responses during shallow conversations ($M = 5.05$, $SD = 2.61$) than their partner would ($M = 4.03$, $SD = 2.39$), $b = 1.03$, $SE = .20$, $t(298.19) = 5.04$, $p < .001$, 95% CI $[.63, 1.42]$, this gap was significantly larger for deep conversations ($M_s = 7.23$ vs. 5.24 , respectively; $SD_s = 2.04$ vs. 2.21), $b = 1.99$, $SE = .20$, $t(298.19) = 9.79$, $p < .001$, 95% CI $[1.59, 2.39]$.

Perhaps more important, comparisons with actual experience indicated that participants systematically underestimated how much they would actually perceive their partner to care about their responses. A mixed linear model with fixed-effects terms for Conversation (Shallow, Deep), Measurement Phase (Expectations, Experiences), and their interaction, and random intercepts for the participant and the partner, yielded a significant effect of Measurement Phase, $b = 1.77$, $SE = .16$, $t(357.00) = 11.25$, $p < .001$, 95% CI $[1.46, 2.07]$, such that participants underestimated partner care. The Conversation $\times$ Measurement Phase interaction effect was nonsignificant, $b = -.38$, $SE = .31$, $t(357.00) = -1.22$, $p = .223$, 95% CI $[-1.00, .23]$, indicating that participants underestimated the recipients' care similarly for the deep and shallow conversations. Consistent with our hypotheses, participants also underestimated their partners' care significantly more than they underestimated their own, $b = 1.42$, $SE = .21$, $t(773.31) = 6.61$, $p < .001$, 95% CI $[1.00, 1.84]$. We then constructed a series of mixed linear models with fixed-effects terms for Conversation,

Measurement Phase, and their interaction, and random intercepts for the participant and the partner, separately for the awkwardness, connectedness, and happiness measures.

Awkwardness

Participants again overestimated the awkwardness of deep conversations significantly more than shallow ones, as indicated by a significant Conversation $\times$ Measurement Phase interaction, $b = .94$, $SE = .38$, $t(302.11) = 2.48$, $p = .014$, 95% CI $[.20, 1.69]$. Although participants overestimated how awkward their shallow conversations would be, $b = -.93$, $SE = .27$, $t(302.11) = -3.44$, $p < .001$, 95% CI $[-1.45, -.40]$, they did so significantly more for deep conversations, $b = -1.87$, $SE = .27$, $t(302.11) = -6.94$, $p < .001$, 95% CI $[-2.39, -1.34]$ (see Figure 6).

Connectedness

As predicted, participants underestimated how connected they would feel to both partners, as shown by a significant effect of Measurement Phase, $b = 1.02$, $SE = .18$, $t(292.99) = 5.58$, $p < .001$, 95% CI $[.66, 1.38]$. The Conversation $\times$ Measurement Phase interaction was nonsignificant, $b = -.16$, $SE = .26$, $t(292.99) = -.61$, $p = .541$, 95% CI $[-.66, .35]$: Participants expected to feel more connected to their deep conversation partner, $b = .98$, $SE = .18$, $t(292.99) = 5.38$, $p < .001$, 95% CI $[.63, 1.34]$, and felt significantly more connected to this person after speaking, $b = 1.14$, $SE = .18$, $t(292.99) = 6.24$, $p < .001$, 95% CI $[.78, 1.50]$.

We also analyzed the item in which participants directly compared the strength of their connection to their two conversation partners. Participants reported significantly stronger connections to their deep conversation partner than their shallow conversation partner ($M = 1.62$, $SD = 3.00$), *one-sample* $t(119) = 5.90$, $p < .001$, 95% CI $[1.07, 2.16]$, $d = .54$.

Happiness

As predicted, participants underestimated how happy they would feel after both conversations, as indicated by a significant effect of Measurement Phase, $b = 1.17$, $SE = .17$, $t(296.00) = 7.03$, $p < .001$, 95% CI $[.84, 1.49]$. Unexpectedly, we also found a significant Conversation $\times$ Measurement Phase interaction effect, $b = -.62$, $SE = .23$, $t(296.00) = -2.63$, $p = .009$, 95% CI $[-1.08, -.16]$: Participants expected to feel equally happy after their shallow and deep conversations, $b = -.07$, $SE = .17$, $t(296.00) = -.40$,

Figure 6
Mean Awkwardness, Connectedness, and Happiness Across Conversation Conditions (Shallow Versus Deep) and Measurement Phase (Expectations Versus Experiences) in Experiment 6a



Note. Error bars ± 1 SE.

$p = .688$, 95% CI $[-.39, .26]$, yet felt significantly happier after their deep conversations, $b = .55$, $SE = .17$, $t(296.00) = 3.31$, $p = .001$, 95% CI $[.23, .87]$.

Mediational Analyses

We found some evidence that underestimating the other person's care explained why participants expected their conversations to unfold less positively than they did. For the shallow conversations, partner care significantly mediated the effect of Measurement Phase (expectations vs. experiences) on connectedness, $b = -.69$, 95% CI $[-1.17, -.32]$, and happiness, $b = -.37$, 95% CI $[-.77, -.05]$, but not awkwardness, $b = .07$, 95% CI $[-.45, .52]$. For the deep conversations, partner care significantly mediated the effect of Measurement Phase on awkwardness, $b = .73$, 95% CI $[.05, 1.50]$, and connectedness, $b = -1.02$, 95% CI $[-1.65, -.52]$, but not happiness, $b = -.30$, 95% CI $[-.73, .22]$.

Desired Conversation Intimacy

Replicating the previous experiments, participants reported that their typical conversations with strangers ($M = 3.55$, $SD = 2.33$) were significantly less intimate than they would ideally prefer ($M = 5.45$, $SD = 2.52$), *paired* $t(119) = -9.03$, $p < .001$, 95% CI_{difference} $[-2.32, -1.48]$, $d = -.78$.

Results (Experiment 6b)

The strength-of-bond and liking items were highly correlated in both the shallow ($\alpha = .77$) and deep ($\alpha = .78$) conditions, as were the three friendship interest items ($\alpha_{\text{shallow}} = .92$, $\alpha_{\text{deep}} = .91$). We collapsed these items to form connectedness and friendship interest scales, respectively.

Manipulation Check

The intimacy manipulation was effective: Participants reported that their deep conversations ($M = 6.78$, $SD = 2.06$) were significantly more intimate than their shallow conversations ($M = 2.19$, $SD = 2.17$), *paired* $t(119) = -16.22$, $p < .001$, 95% CI_{difference} $[-5.15, -4.03]$, $d = -2.17$.

Preference Measures

Before engaging in the conversations, participants expected to prefer the shallow conversation relative to the deep conversation ($M = -1.56$, $SD = 3.25$), *one-sample* $t(119) = -5.26$, $p < .001$, 95% CI $[-2.15, -.97]$, $d = -.48$. After the conversations, however, participants reported preferring the deep conversation ($M = .88$, $SD = 3.26$), *one-sample* $t(119) = 2.94$, $p = .004$, 95% CI $[.29, 1.46]$, $d = .27$. As a result, participants significantly underestimated the extent to which they would prefer the deep conversation, *paired* $t(119) = -6.77$, $p < .001$, 95% CI_{difference} $[-3.14, -1.72]$, $d = -.75$.

After engaging in both conversations, participants also reported which questions they expected to prefer discussing in a future study session. Participants did not show a statistically significant preference for one conversation type over another ($M = .43$, $SD = 3.40$), *one-sample* $t(119) = 1.39$, $p = .166$, 95% CI $[-.18, 1.05]$, $d = .13$. This means that participants' reported preferences shifted significantly after having their conversations: Whereas participants expected to prefer the shallow conversation at the start of the study

session, their predicted preferences shifted significantly in the direction of the deep conversation questions after actually engaging in both conversations, *paired* $t(119) = -6.16$, $p < .001$, 95% CI_{difference} $[-2.63, -1.35]$, $d = -.60$. This result suggests participants learned something during their conversations that they then used to update their expectations. Indeed, a post hoc analysis indicates that participants' reported preferences before their conversations were only modestly correlated with their experienced preferences after their conversations, $r = .27$, $t(118) = 3.03$, $p = .003$, 95% CI $[.09, .43]$. In contrast, their experienced preferences were very strongly correlated with their preferences for a future conversation, $r = .73$, $t(118) = 11.77$, $p < .001$, 95% CI $[.64, .81]$. These two correlations differ significantly from each other, $Z = -6.13$, $p < .001$. Participants learned that the relatively deep conversation was more positive than the relatively shallow conversation, and used their direct experience to update their expectations for the future. Misunderstanding the outcomes of relatively deep conversation could create a barrier to engaging in them more often in everyday life, thereby keeping people from having the very experiences that would allow them to learn that their expectations could be miscalibrated (see also Epley & Schroeder, 2014, Experiment 4).

Experience Measures

Participants preferred the deep conversation because their experiences were more positive overall during the deep conversation than the shallow conversation. We constructed mixed linear models with fixed-effects terms for Conversation (Shallow, Deep) and random-intercept terms for the participant and the partner, separately for each measure. Participants cared significantly more about their own responses during the deep conversation than the shallow conversation, $b = -1.84$, $SE = .29$, $t(235.00) = -6.43$, $p < .001$, 95% CI $[-2.40, -1.28]$, and perceived the other person to care more about one's own responses during the deep conversation, $b = -1.37$, $SE = .28$, $t(238.00) = -4.90$, $p < .001$, 95% CI $[-1.91, -.82]$. Participants reported that their deep conversations felt only marginally more awkward than their shallow conversations, $b = -.63$, $SE = .35$, $t(232.81) = -1.82$, $p = .070$, 95% CI $[-1.31, .05]$, but that they felt significantly more connected to their partner, $b = -1.10$, $SE = .25$, $t(238.00) = -4.33$, $p < .001$, 95% CI $[-1.59, -.60]$, and more interested in being friends with the person, $b = -.94$, $SE = .27$, $t(238.00) = -3.42$, $p < .001$, 95% CI $[-1.48, -.40]$, after the deep conversation. Happiness did not differ significantly between the deep and shallow conversations, $b = -.28$, $SE = .21$, $t(238.00) = -1.34$, $p = .182$, 95% CI $[-.70, .13]$ (see Figure 7).

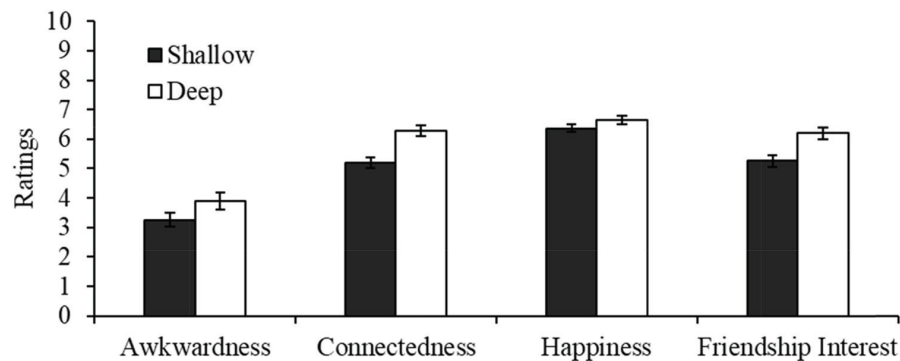
Desired Conversation Intimacy

Replicating the previous experiments, participants reported that their typical conversations with strangers ($M = 2.79$, $SD = 2.26$) were significantly less intimate than they would ideally prefer ($M = 5.54$, $SD = 2.65$), *paired* $t(119) = -11.11$, $p < .001$, 95% CI_{difference} $[-3.24, -2.26]$, $d = -1.11$.

Discussion

Consistent with Experiments 1a–5, participants again generally underestimated how positive their conversations would be, and also

Figure 7
Mean Awkwardness, Connectedness, and Happiness Experiences Across Shallow and Deep Conversations in Experiment 6b



Note. Error bars ± 1 SE.

overestimated how awkward deep conversations would be relative to shallow conversations. In contrast to some of the preceding experiments, participants also felt significantly more connected to their deep conversation partner than their shallow conversation partner, suggesting that people establish stronger connections through deep conversation—yet may be better able to report the relative strength of this connection when they compare two conversations directly.

More important, Experiment 6b provided direct measures of participants' preferences for relatively deep versus shallow conversations. Participants expected to prefer the shallow conversation more than the deep conversation before having the conversations, but consistent with our hypotheses, they reported actually preferring the deep conversation after having both of them. Not only does having a deep conversation with another person seem to be a surprisingly positive experience, it seems to be *more* positive than having a shallow conversation. As a result of their direct experience, participants also appeared to learn that they would prefer a relatively deep conversation in the future more than their initial expectations suggested. This result highlights how miscalibrated expectations could create a barrier to engaging in deeper and more meaningful conversations, thereby encouraging shallower conversations than might be optimal for one's own relationships.

Experiments 7a and 7b test the final step in our theorizing. Specifically, we predict that directly manipulating the psychological barrier created by miscalibrated expectations would encourage people to have deeper conversations than they might otherwise. Because the preceding experiments suggest that people undervalue deep conversations at least partly because they underestimate how much others will care, and be interested in, the conversation's content, we manipulated how much participants would expect their conversation partner to care and then measured the intimacy of questions they were interested in discussing with their partner. We did so in Experiment 7a by manipulating whether people imagined talking with someone they knew to be very caring or a person they knew to be indifferent, and in Experiment 7b by either informing or not informing participants that their beliefs about others' care tend to be systematically miscalibrated. We expected participants to select deeper conversational topics to discuss when they

imagined talking with a relatively caring person in Experiment 7a, and when they learned that people tend to underestimate how much others care in conversation (vs. overestimate, or no information). If underestimating the extent to which others care about the content of conversation creates a barrier to deeper conversations, then removing it either by imagining conversation with a caring other or by calibrating participants' expectations should encourage deeper conversation. Note that this would occur only if participants were personally interested in having deeper conversations more often in daily life, as participants in Experiments 1a, 1b, 1c, 4a, 4b, 6a, and 6b reported.

Experiments 7a–7b: Anticipated Indifference as a Barrier to Deep Talk

Pretest

Before conducting the experiments, we pretested 20 discussion questions for perceived intimacy, some of which were used in Experiments 1a–1c, 2, 4a–4b, and 6a–b (see [online supplemental materials](#) for full details). The four perceived intimacy items were highly correlated ($\alpha = .96$) and so we combined them to form an intimacy scale. We designated the 10 questions with the highest average intimacy ratings as deep questions and the 10 questions with the lowest average intimacy ratings as shallow questions (see [Appendix](#)).

Method

Participants

We recruited 100 participants from MTurk ($N = 93$ after exclusions; $M_{\text{age}} = 35.30$; $SD_{\text{age}} = 9.99$; 36.56% female; 78.49% White) to complete Experiment 7a in exchange for \$1.75. We excluded seven participants from analyses because they failed the attention check described below.

We recruited 160 participants from MTurk ($N = 130$ after exclusions; $M_{\text{age}} = 35.92$; $SD_{\text{age}} = 12.36$; 46.15% female; 75.38% White) to complete Experiment 7b in exchange for \$1.20. We

excluded 30 of these participants because they failed one or more attention of the checks described below.

Procedure

Participants in Experiment 7a imagined visiting a “social interaction” research lab where they would speak with another study participant they had never met before in a discussion called the “sharing game.” Participants were then randomly assigned to the caring or uncaring condition. Participants in the “caring” condition read, “Before the session begins, suppose you see the other person in the waiting room. You’ve seen this person around and you have the impression that this person is very sociable, caring, and considerate of others. Although you don’t know this person, you feel pretty confident in your judgment.” Participants in the “uncaring” condition read, “Before the session begins, suppose you see the other person in the waiting room. You’ve seen this person around and you have the impression that this person is rather indifferent toward others and isn’t very caring or considerate. Although you don’t know this person, you feel pretty confident in your judgment.”

Participants in both the caring and uncaring conditions then read the 20 possible discussion questions and selected five they would most like to ask and answer while speaking with the other person. The questions were presented in random order and not labeled in any way. After selecting five questions, participants then viewed each of the 20 questions separately and for each question reported how much they wanted to discuss the question with the other person (0 = *not at all*; 10 = *quite a bit*), how much they would care about their own response to the question (0 = *not at all*; 10 = *quite a bit*), and how much they believed the other person would care about the participant’s response to the question (0 = *not at all*; 10 = *quite a bit*). After evaluating the questions, participants completed an attention check by reporting whether the other participant was described as sociable, caring, and considerate or as indifferent and not very caring or considerate. Finally, participants reported demographic information and received payment.

The procedure for Experiment 7b was identical to Experiment 7a with three exceptions. First, we designed manipulations that either did or did not inform participants that people’s expectations tend to be systematically miscalibrated. Participants in the *underestimation* condition read, “In these experiments, we find that people tend to UNDERESTIMATE how much strangers will care about each other’s responses to these questions. That is, strangers tend to be MORE concerned and interested in each other’s responses than people expect.” Participants in the *overestimation* condition read, “In these experiments, we find that people tend to OVERESTIMATE how much strangers will care about each other’s responses to these questions. That is, strangers tend to be LESS concerned and interested in each other’s responses than people expect.” Participants in the *control* condition were not told anything about the extent to which others’ expectations tend to be calibrated. Second, after selecting five out of the 20 questions, participants in this experiment reported how interested they would be in asking and answering each of the 20 questions with the other person (0 = *not at all*; 10 = *extremely*), but did not predict the degree of care for either themselves or their conversation partner. Third, we tailored the attention checks to the current procedure by asking participants to report whether they imagined speaking with

a friend or stranger, and to report what they had been told about the results of our previous research experiments.

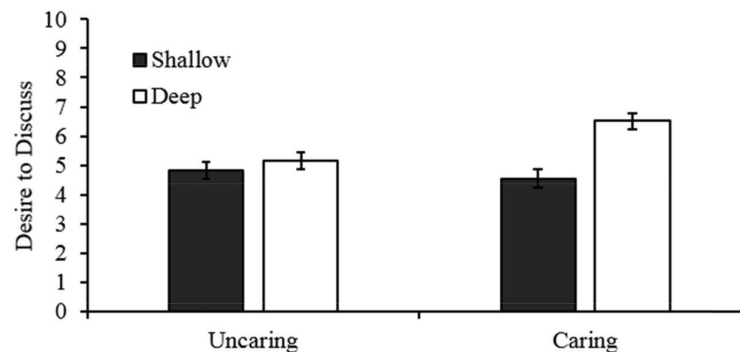
Results

We preregistered analyses of the number of deep and shallow questions participants selected across conditions in both Experiments 7a and 7b, but also report analyses of the average intimacy level of the questions selected.

As predicted, participants in the caring condition of Experiment 7a ($M = 3.09$, $SD = 1.44$) selected significantly more deep questions than did participants in the uncaring condition ($M = 2.02$, $SD = 1.73$), $t(91) = 3.23$, $p = .002$, 95% $CI_{\text{difference}}$ [.41, 1.72], $d = .67$. Participants in the caring condition also selected questions higher in average intimacy ($M = 4.96$, $SD = 1.22$) than did participants in the uncaring condition, ($M = 4.24$, $SD = 1.48$), $t(91) = 2.53$, $p = .013$, 95% $CI_{\text{difference}}$ [.15, 1.27], $d = .53$. These differences in choice could arise either because participants in the caring condition have a stronger desire to discuss deep questions or because they have a weaker desire to discuss shallow ones, compared with participants in the uncaring condition. We computed each participant’s mean desire to discuss the 10 shallow questions and the 10 deep questions, separately. Consistent with our predictions, participants in the caring condition were particularly interested in discussing deep questions. A 2 (Partner: Caring, Uncaring) $\times$ 2 (Question Type: Shallow, Deep) ANOVA with repeated measures on the second factor yielded a significant Partner $\times$ Question Type interaction, $F(1, 91) = 9.52$, $p = .003$, $\eta_p^2 = .09$ (see Figure 8): Participants in the caring and uncaring conditions did not differ in their desire to discuss shallow questions, $t(91) = -.70$, $p = .486$, 95% $CI_{\text{difference}}$ [−1.07, .51], $d = -.14$, but those in the caring condition were significantly more interested in discussing deep questions, $t(91) = 3.30$, $p = .001$, 95% $CI_{\text{difference}}$ [.54, 2.16], $d = .68$. Underestimating others’ care may create a barrier to having deeper and more intimate conversations.

In Experiment 7b, a one-way ANOVA indicated that the number of deep questions selected varied significantly across care conditions, $F(2, 127) = 3.71$, $p = .027$, $\eta_p^2 = .06$. As predicted, participants in the underestimation condition ($M = 2.41$, $SD = 1.12$) selected significantly more deep questions than participants in the overestimation condition ($M = 1.69$, $SD = 1.26$), $t(127) = -2.68$, $p = .008$, 95% $CI_{\text{difference}}$ [−1.26, −.19], $d = -.57$. The number of deep questions selected in the control condition fell in between ($M = 2.15$, $SD = 1.44$), differing neither from the underestimation condition, $t(127) = -.95$, $p = .344$, 95% $CI_{\text{difference}}$ [−.83, .29], $d = -.21$, nor the overestimation condition, $t(127) = -1.69$, $p = .094$, 95% $CI_{\text{difference}}$ [−1.00, .08], $d = -.36$. Likewise, the mean intimacy of selected questions varied by condition, $F(2, 127) = 3.40$, $p = .036$, $\eta_p^2 = .05$, with participants in the underestimation condition ($M = 4.53$, $SD = 1.02$) selecting questions of higher average intimacy than participants in the overestimation condition ($M = 3.92$, $SD = 1.10$), $t(127) = -2.60$, $p = .010$, 95% $CI_{\text{difference}}$ [−1.06, −.14], $d = -.55$. The mean intimacy of selected questions in the control condition fell in between ($M = 4.16$, $SD = 1.14$), and did not differ significantly from either the underestimation condition, $t(127) = -1.51$, $p = .133$, 95% $CI_{\text{difference}}$ [−.84, .11], $d = -.33$, or the overestimation condition, $t(127) = 1.03$, $p = .304$, 95% $CI_{\text{difference}}$ [−.22, .70], $d = .22$.

Figure 8
Mean Desire to Discuss Across Partner (Uncaring Versus Caring) and Question Type (Shallow Versus Deep) in Experiment 7a



Note. Error bars ± 1 SE.

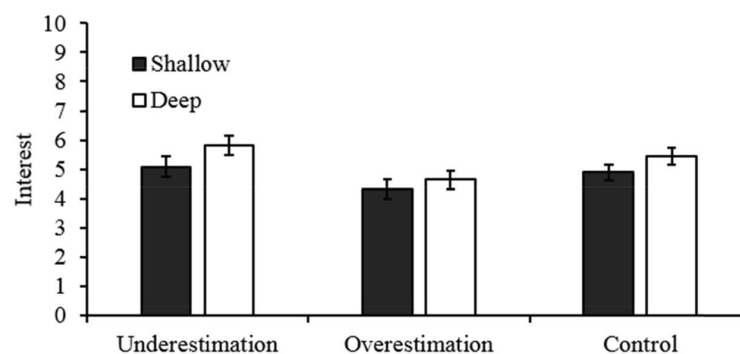
As with Experiment 7a, we tested whether these differences arose from differences in interest in discussing deep questions, shallow questions, or possibly both. We did so by comparing participants' reported desire to discuss the 10 deep and 10 shallow questions, on average, between the underestimation and overestimation conditions. A 2 (Care: Underestimation, Overestimation) $\times$ 2 (Question Type: Shallow, Deep) ANOVA with repeated measures on the second factor and mean interest as the dependent measure yielded a significant main effect of Care, $F(1, 87) = 5.89$, $p = .017$, $\eta_p^2 = .06$, indicating that participants in the underestimation condition were more interested in discussing the questions overall, and a significant main effect of Question Type, $F(1, 87) = 4.62$, $p = .034$, $\eta_p^2 = .05$, indicating that participants in both conditions were more interested in discussing deep versus shallow questions. The Care $\times$ Question Type interaction effect was nonsignificant, $F(1, 87) = .69$, $p = .410$, $\eta_p^2 = .01$. However, planned contrasts provide some evidence that participants in the underestimation condition may have been somewhat more interested in discussing deep questions: Participants in the underestimation condition reported only marginally greater interest in discussing shallow questions than participants in

the overestimation condition, $t(127) = -1.68$, $p = .095$, 95% CI_{difference} $[-1.65, .13]$, $d = -.36$, but reported significantly greater interest in discussing deep questions, $t(127) = -2.68$, $p = .008$, 95% CI_{difference} $[-2.04, -.31]$, $d = -.57$ (see Figure 9).

Discussion

Underestimating the extent to which others care about the content of deep conversation can create miscalibrated expectations about the outcomes of these conversations, and also create a barrier to engaging in these conversations in the first place. Experiments 7a and 7b suggest that manipulating this barrier directly may influence people's preferences for deeper conversations with strangers. Participants in Experiment 7a chose deeper questions when they expected their conversation partner to be caring rather than indifferent. Participants in Experiment 7b likewise chose deeper questions when they were told that people tend to underestimate strangers' care than when they were instead told that people tend to overestimate strangers' care. It is important to note that although the control condition in Experiment 7b was different from neither the overestimation nor underestimation condition, it

Figure 9
Mean Interest Across Care (Overestimation Versus Underestimation Versus Control) and Question Type (Shallow Versus Deep) in Experiment 7b



Note. Error bars ± 1 SE.

was at least descriptively more similar to the underestimation condition. We are not sure how to interpret this result because we did not obtain a manipulation check to test how much this particular experimental manipulation actually affected participants' expectations. It could be that it is simply easier to convince people that others care less than expected about a deep conversation than to convince them that others care more. These particular results confirm that manipulating perceptions of others' care can affect preferences for deep talk, but they cannot at this point confirm whether weakening or strengthening that barrier is likely to have a larger impact on people's social preferences.

General Discussion

Human beings are a deeply social species, whose wellbeing and health are tightly tied to the quality of their social relationships (Diener & Seligman, 2002; Holt-Lunstad, 2018; Sun et al., 2020). It is not surprising that most people have strong desires to strengthen and maintain meaningful relationships (Baumeister & Leary, 1995; Ryan & Deci, 2000), actively combatting feelings of loneliness and isolation by seeking social connection with others (Maner et al., 2007). Disclosing meaningful and intimate information with others in conversation is one way to strengthen social relationships (Aron et al., 1997; Collins & Miller, 1994), and so it is also not surprising that participants in our experiments reported wanting to have more deep and meaningful conversations with others more often in their daily lives. If people want deeper conversations with others, then why aren't they having them?

Our data suggest that underestimating others' deeply social nature—assuming that others will be more indifferent and uncaring in conversation than they actually are—could help to explain why conversations in daily life are shallower than people might prefer. Our participants consistently expected their conversations to be more awkward, and to lead to weaker connections and less happiness, than they actually did regardless of whether participants generated the topics of conversation (Experiments 3 and 5) or not (Experiments 1a, 1b, 1c, 2, 4a, 4b, 6a, and 6b). Participants also consistently overestimated how awkward deep conversations would be more so than shallow conversations (Experiments 2–6a), but were more calibrated for conversations with close others whose care and interest were more clearly known (Experiment 5). Finally, participants chose deeper questions when they expected their conversation partner to be relatively more caring (Experiments 7a and 7b), providing the clearest evidence that miscalibrated inferences about others' sociality may act as a psychological barrier to deeper conversations.

Limitations

Although participants' tendency to underestimate the positive outcomes of deep conversation was robust across important methodological variations, there are at least three potential limitations on the generalizability of our results.

Our first limitation on generalizability is that all of our experiments manipulated intimacy in experimental settings in which both people in the conversation knew they were going to have a conversation as part of an experiment. This is obviously not the case in naturalistic conversations in daily life in which people are likely to be more uncertain about whether another person is likely

to reciprocate deeper and more intimate disclosures, and also must infer why another person is asking relatively deeper or shallower conversation topics. Asking another person to share the last time they cried in front of someone else might be received much differently when you raise the question to the person standing next to you in the supermarket line than it was in our experiments. Of course, any differences between our experimental procedures and more naturalistic circumstances are also likely to affect people's expectations of the interaction in a way that could still maintain the critical gap we observed between the expected and actual outcomes of more naturalistic conversations. The deeper question one might consider asking in the supermarket line might still yield a better conversation than expected.

In fact, we think people might be even more likely to underestimate the positive outcomes of deep conversations in naturalistic settings outside the lab. Previous research in both the United States and in the United Kingdom indicates that people may underestimate strangers' willingness to engage in conversation in naturalistic field experiments on trains, busses, and cabs, which can partly then explain people's tendency to underestimate how much they would enjoy having a conversation with a stranger (Epley & Schroeder, 2014; Schroeder et al., *in press*; see also Sandstrom & Boothby, 2021). Our experimental procedures eliminate this concern by instructing participants to speak with another study participant who they know will engage them in conversation. Our experiments may provide a more conservative test of whether people underestimate the value of deep conversations compared with more naturally occurring conversations. In addition, starting a meaningful conversation signals one's trust and interest in the listener. This signal may be more influential when the listener cannot attribute the depth of conversation to an experimental instruction. In daily life, listeners may be even more concerned about intimate details that another person freely shares with them. Nevertheless, it could also be that listeners form more negative inferences about another person's interest or intent when they raise deeper conversation topics in daily life, such as inferring that another person is interested in a romantic relationship or is potentially trying to manipulate or take advantage of a listener in some way. It is possible these inferences are not anticipated by those trying to start a conversation, in which case the gap between expected and actual outcomes of deeper conversations might vary across contexts.

Future research could examine the generalizability of our results in more naturalistic contexts by manipulating whether both participants are aware of the conversation instructions or not. To the extent that both participants reveal meaningful information about themselves during the conversation, our theory predicts that deep conversations should lead to similar, if not even stronger, connections when one person is unaware of the conversation instructions. The generalizability of our effects could also be tested using diary methods in which people are asked to engage in relatively deeper or shallower conversations over the course of a day and then report their experiences at the end of the day, or simply by asking people to engage in a deeper conversation when they have a natural opportunity to do so in daily life. Existing research using this methodology has found that people report more positive affect when asked to act extraverted than when asked to act introverted (Margolis & Lyubomirsky, 2020), when asked to engage in conversation on a train or bus compared with remaining silent (Epley & Schroeder, 2014; Schroeder et al., *in press*), or simply when asked

to try to make a connection to a coffee shop barista compared with being as efficient as possible (Sandstrom & Dunn, 2014a; see also Gunaydin et al., 2021). These existing results, showing positive affect resulting from simply engaging with others in naturalistic settings, give us reason to believe that engaging more deeply in these same settings would enhance positive affect as well.

A second potential limitation on generalizability is that our experiments investigated only short-term outcomes of a single relatively shallow and/or deep conversation. There could be longer-term consequences, either more positive or negative, of these conversations that we did not measure. For instance, participants in Experiment 2 felt somewhat lonelier after having a relatively deep conversation than after a shallower conversation. Although we only measured loneliness in one experiment, and hence do not know how robust this result is, it could be that a single conversation highlights dissatisfying features of a person's other relationships, such as other relationships being shallower than one might desire, that affect a person's wellbeing in a more complicated fashion beyond the single interaction we examined. It could also be that people feel worse over time after a very satisfying conversation with a stranger after recognizing that they are not likely to have another conversation with that person again. Again, field experiments involving diary methods would be an appropriate way of examining longer-term outcomes of having relatively more or less deep conversations in everyday life.

A final potential limitation on the generalizability of our results comes from conducting all of our experiments within in a relatively narrow time period within the United States. Although our samples are relatively diverse, including university students, master's degree students from around the world, and corporate employees and executives in the United States, it is reasonable to wonder how our effects may—or may not—vary across cultures. Cultures may vary in their openness to strangers, with individualistic cultures generally being more accepting and open to strangers and collectivistic cultures prioritizing ingroup relationships. If cultural differences exist in the willingness to engage in deep and meaningful conversations with strangers, then they could arise either from cultural differences in expectations or from cultural differences in actual experiences. Given the fundamental importance of social relationships across humans' evolutionary history (Dunbar, 1998; von Hippel, 2018), we would predict that expectations about others' care and interest are more likely to vary across cultures than the actual experience of deep and meaningful conversation. Cultures could vary in the relative frequency of deep versus shallow conversations because they vary in their social expectations rather than in their social experiences. Note that the social expectations we have identified are the very kind that would create social avoidance and hence keep people from learning about the actual consequences of relatively shallow versus deep conversations. In Experiment 6b, participants reported a stronger preference for deep conversation after having both a shallow and a deep conversation, preferences that our data suggest would be more closely aligned with optimizing people's subjective experience and the quality of their relationships. Similarly, individuals within a given culture might vary in their social expectations, such that those who are highly socially avoidant (Strachman & Gable, 2006), high in rejection sensitivity (Pietrzak et al., 2005), or insecurely attached (Keelan et al., 1998) might also be especially pessimistic about deeper conversations, and hence avoid them more

often in daily life. Miscalibrated expectations may come partly from avoiding the experiences that would otherwise calibrate a person's expectations.

Unanswered Questions

We believe our current results make important theoretical contributions to the literatures on both self-disclosure and wellbeing. Decisions to open up to another person or remain more guarded are based in part on how people expect that their interaction partner will respond (Afifi & Steuber, 2009; Kardas et al., 2021; Omarzu, 2000; Ruan et al., 2020), yet psychologists have primarily examined the causes (Altman & Taylor, 1973; Berg & Clark, 1986; Cline, 1989) and consequences (Collins & Miller, 1994; Kelly & McKillop, 1996) of self-disclosure separately from one another. Our article highlights the importance of combining these two streams of research. Understanding how miscalibrated inferences about others' social interest and care guide decisions about the content of conversation can help to explain why people may be missing out on opportunities to establish stronger connections with others.

We believe our research also highlights the importance of measuring the accuracy of the causes underlying self-disclosure, in this case the calibration between expectations of others' reactions in conversation and their actual reactions. Doing so opens up new questions for theoretical inquiry, especially whether people disclose *enough* deep and intimate content in their interactions to maximize the quality of relationships. Experiments 1a–5 do not answer this question definitively. Although participants tended to underestimate how positive deep conversation would be overall, the deep conversations were indeed somewhat more awkward than the shallow conversations in actual experience. Instead of guessing about how people themselves might integrate these unique aspects of their experience into an overall preference for conversations, we enabled participants to compare these two conversations against each other directly in Experiments 6a and 6b by instructing them to have both a deep and a shallow conversation. These experiments provided the clearest evidence that people uniquely underestimate the positive outcomes of deep conversation, that deep conversations indeed create more positive experiences than shallow conversations overall, and that people report preferring the deeper conversation afterward to a greater extent than they expected beforehand. These results suggest that miscalibrated expectations may leave people being overly reluctant to discuss deep and intimate content in their everyday conversations with strangers.

Although participants significantly preferred relatively deeper conversations to shallower conversations in Experiments 6a and 6b, it is worth noting that participants across our experiments also tended to report positive experiences after relatively shallow conversations, and tended to report more positive (and slightly less negative) experiences in these conversations than they anticipated as well. These results are consistent with prior research suggesting a more general phenomenon in which conversations with strangers tend to be surprisingly pleasant (Epley & Schroeder, 2014; Sandstrom & Boothby, 2021). Indeed, we observed somewhat inconsistent differences in experienced connectedness, happiness, and enjoyment across the experiments in which participants experienced only a relatively deep or shallow conversation. For instance,

participants in the deep condition felt significantly more connected to their conversation partner than did participants in the shallow or control condition in Experiments 3 ($p = .022$, $d = .47$) and 4a ($p = .016$, $d = .48$), but did not differ significantly in Experiments 2 ($p = .135$, $d = .32$) and 4b ($p = .970$, $d = -.01$). Participants in the deep condition also felt marginally happier about their conversation than did participants in the shallow or control condition in Experiment 3 ($p = .088$, $d = .34$), but did not report feeling significantly happier in Experiments 4a ($p = .962$, $d = -.01$), 4b ($p = .309$, $d = -.20$), or in Experiment 5 among participants who spoke with either distant strangers ($p = .190$, $d = .26$) or close others ($p = .160$, $d = .28$). These somewhat inconsistent results are surprising because previous literature suggests that intimate self-disclosure should lead to more positive conversations than impersonal disclosures (Aron et al., 1997; Collins & Miller, 1994), and our manipulations were designed precisely to encourage more intimate disclosures in the deep conditions.

Inconsistency in the connection value of deep conversation may come partly from the unique nature of our experimental exchanges compared with the existing literature. Many prior experiments have more carefully constrained the breadth and depth of self-disclosure through impression-formation tasks in which participants read about or observe others' interactions (e.g., Berg & Archer, 1980; Bradac et al., 1978; Chaikin & Derlega, 1974) or by using written essays and self-descriptions (Brewere & Mittelman, 1980; Rubin, 1975). Even procedures involving live, spoken interactions have often required that participants deliver uninterrupted verbal self-descriptions (Chaikin et al., 1975; Jones & Archer, 1976) or engage in structured question-answer sequences (Sprecher et al., 2013). Each of these methodologies carefully controls the amount of self-disclosure and thereby tests the impact of self-disclosure on liking and connectedness. However, doing so also reduces ecological validity by constraining the natural flow of back-and-forth conversation. In contrast, participants in Experiments 1a–5 engaged in back-and-forth conversations and were not explicitly forbidden from discussing content beyond the scope of the discussion questions. Participants in Experiments 6a and 6b were encouraged not to stray from the questions we asked them to discuss, but their conversations were not monitored or constrained beyond that instruction. Overall, our experiments may better approximate conversation in everyday life, but they also sacrifice the tight experimental control that would come from more scripted or one-sided exchanges.

Rather than call into question existing literature on self-disclosure, we believe that our findings may suggest an important moderator to explain when, and why, intimacy manipulations influence positive outcomes such as liking and connectedness (Collins & Miller, 1994). Intimacy manipulations may have greater impact in static exchanges such as impression-formation tasks, written exchanges, and structured question-answer sequences than in dynamic exchanges involving back-and-forth conversation. Indeed, the small number of prior experiments that have manipulated intimacy in less structured interactions have produced mixed findings. Some experiments have produced differences in experienced connectedness (Aron et al., 1997; Shearer, 2017) while others have produced mixed evidence across multiple experiments (Kashdan et al., 2011) or no differences (Besst, 2016; Kashdan & Roberts, 2006). Because conversation naturally becomes more intimate as people continue talking (Taylor, 1968), even relatively

superficial questions may promote liking and connectedness by acting as a gateway to somewhat deeper conversation, thereby promoting relatively positive outcomes regardless of the initial depth of the conversation.

As already mentioned, anecdotal reports from the live debriefing of Experiment 4b support this possibility, with participants describing how surprisingly deep and meaningful their ostensibly “shallow” conversations became as they unfolded. Some results from Experiment 5 are at least consistent with this possibility of increasing intimacy even in what we intended to be relatively shallow conversations. In the control conditions, participants who spoke with distant strangers perceived their conversations ($M = 4.21$, $SD = 2.22$) to be significantly more intimate than the questions they discussed ($M = 2.50$, $SD = 2.40$), *paired* $t(49) = -4.98$, $p < .001$, 95% $CI_{\text{difference}} [-2.40, -1.02]$, $d = -.70$, and those who spoke with close others likewise perceived their conversations ($M = 5.03$, $SD = 2.46$) to be significantly more intimate than the questions they discussed ($M = 3.70$, $SD = 2.65$), *paired* $t(49) = -3.69$, $p < .001$, 95% $CI_{\text{difference}} [-2.05, -.61]$, $d = -.52$. In contrast, these patterns weakened or reversed in the deep conditions, such that participants who spoke with distant strangers perceived their conversations ($M = 6.41$, $SD = 1.67$) to be *less* intimate than the questions they discussed ($M = 7.04$, $SD = 1.58$), *paired* $t(49) = 2.09$, $p = .042$, 95% $CI_{\text{difference}} [.02, 1.24]$, $d = .30$, and those who spoke with close others likewise perceived their conversations ($M = 7.49$, $SD = 1.86$) to be no more intimate than the questions they discussed ($M = 7.78$, $SD = 1.43$), *paired* $t(49) = 1.22$, $p = .230$, 95% $CI_{\text{difference}} [-.19, .77]$, $d = .17$.

These results raise two interesting topics for future research. First, relatively shallow questions could act as a gateway to deeper conversation, potentially helping to explain why our deep conversation conditions did not consistently create significantly stronger experiences of connectedness, happiness, and enjoyment in our experiments than our comparison conditions. Second, our experiments attempted to hold the depth of conversation topics constant across conditions, but self-disclosure may naturally change over the course of naturalistic conversations. People may expect that conversations are better when they become increasingly intimate over the course of the conversation, and hence start conversations more shallowly than they hope to end them (Aron et al., 1997). It would be interesting and important to understand how people's expectations about changes in intimacy across conversations are aligned with their actual experiences.

If unscripted conversations do indeed tend to change over the course of the conversation in ways that people do not fully anticipate, then this could also help explain one other unexpected result: In Experiments 4a and 4b, participants in the shallow condition expected to feel significantly less connected to each other than participants in the deep condition, yet both groups actually felt strongly connected after speaking. As a result, participants in the shallow condition underestimated how connected they would feel *more* than did participants in the deep condition. Natural conversation may transform relatively shallow topics into relatively deeper content as the conversation continues. If people overlook this property of conversation and instead focus myopically on the topics that they plan to discuss—in a similar way that people expect their emotional reactions to major life events to be determined largely by the event in question and not by other future events or by their ability to make sense of the event (Gilbert et al.,

1998; Wilson et al., 2000)—then they could underestimate positive outcomes more for shallow questions than for deep questions due to exaggerated differences in their expectations. This hypothesis predicts that people should underestimate the positive outcomes of conversation even more for *trivial* topics that initially require virtually no self-disclosure. In contrast, people should have more accurate expectations of more highly structured question-answer sequences that constrain the natural dynamics of back-and-forth conversation and keep conversations from becoming increasingly intimate. We believe this increasing intimacy hypothesis about unconstrained conversation warrants further investigation because it may help to explain a range of findings indicating that people underestimate how much they will enjoy connecting with distant strangers (Dunn et al., 2007; Epley & Schroeder, 2014; Mallett et al., 2008).

Our findings also raise questions about other novel mechanisms guiding social behavior that may lead people to mismanage their relationships. One question emerges from the different patterns of results obtained on our different outcome measures: In most of our experiments, participants underestimated their connectedness and happiness, and their partner's care, equally for deep and shallow conversations yet overestimated their awkwardness more for deep conversations. Moreover, we found stronger evidence that underestimating others' care explained participants' miscalibrated expectations of connectedness and happiness than awkwardness. One explanation for these divergent findings concerns the expected ambivalence of deep talk: Participants generally expected deep conversations to create more positive experiences of connectedness and happiness *and* more negative experiences of awkwardness than superficial conversations. Prior research suggests that as an event approaches in time, people may focus more narrowly on its perceived risks relative to its perceived reward (Baumeister et al., 2001; Brown, 1948; Epstein & Fenz, 1962; Miller, 1944). This heightened sensitivity to immediate risks could cause people to expect immediate deep conversations to be particularly awkward, creating a reluctance to discuss deep topics in the midst of an ongoing conversation—even if they recognize in the abstract that they would prefer to have deeper conversations more often in their daily lives. Such a mechanism could lead to excess avoidance in a wide range of social situations because almost any decision to engage with others can lead to either positive outcomes of social connection and happiness or negative outcomes of awkwardness stemming from others' indifference or outright hostility. Future research could test this explanation by manipulating whether a deep conversation will take place immediately or in the distant future and measuring whether participants expect immediate deep conversations to be more negative than distant ones. Another possible explanation is that multiple classes of mechanisms contributed to the patterns of miscalibrated expectations observed in our experiments: Apart from expecting *others* to be less caring than they were, participants may have failed to appreciate how comfortable and positive *they* would personally feel about disclosing self-relevant information to another person. Self-disclosure may feel less awkward than people expect, independent of feedback received from the listener. If so, this finding would bridge the literatures on social judgment and affective forecasting, which have been studied separately but could operate jointly to create unnecessary barriers to self-disclosure (see also Leunissen et al., 2014).

Broader Implications

We document that people undervalue the positive consequences of conversations, especially deep conversations, at least partly because they underestimate how much strangers in conversation will be interested in the content of the conversation, and care about the intimate information being shared. We believe this is part of broader tendency to underestimate others' sociality, thereby creating a wide variety of psychological barriers to social engagement. People may underestimate how interested strangers on trains, buses, and cabs are in talking, thereby creating reluctance to start a conversation and increase one's wellbeing (Epley & Schroeder, 2014). Similarly, people underestimate how positive others will feel following an expression of gratitude (Kumar & Epley, 2018), a random act of kindness (Kumar & Epley, 2021), a compliment (Boothby & Bohns, 2021; Zhao & Epley, *in press*), a trusting disclosure of a negative secret (Kardas et al., 2021), and even a constructive confrontation in an established relationship (Dungan & Epley, 2021). People expect others to be more indifferent to these prosocial acts than others actually are, just as we found for deep conversation. There are several possible explanations for these effects. One is that people tend to dehumanize others by assuming that others have weaker mental capacities, including capacities for empathy and compassion, than they do themselves (Haslam et al., 2005; Waytz et al., 2014). Another is that egocentric biases in judgment may lead people to undervalue the importance of expressing warmth in others' evaluations. Actors in a situation tend to focus relatively more on competency-related aspects of their actions—how well one might express intimate thoughts in a conversation or in writing—while observers or recipients of these actions tend to be focused on warmth-related aspects of the same actions (Fiske et al., 2007; Wojciszke, 1994). If expectations of social interactions are guided by a heightened attention to *how* they are connecting to others—such as by focusing on the content of relatively shallow or deep conversation topics—but experiences are guided more heavily by the warmth conveyed in those interactions—such as the trust conveyed by revealing intimate details in a deep conversation—then people could systematically underestimate the power of social motivations in others. We believe that understanding these deeper mechanisms is a critical topic for future research because it could explain a wide variety of seemingly related phenomena in social life.

Finally, we believe our findings have important practical implications. Social life affords many opportunities to engage, and to engage more deeply, with others around us. Our participants' expectations about deeper conversations were not woefully misguided, but they were reliably miscalibrated in a way that could keep people from engaging a little more deeply with others in their daily lives. These miscalibrated expectations could matter for two reasons. First, by creating a barrier to engaging with others, these expectations could be self-fulfilling because they keep people from obtaining data that could otherwise calibrate their expectations. If you think that a deep conversation is likely to be especially awkward, then you are unlikely to give yourself the chance to find out that you might be a little bit wrong. Only by engaging with others do people accurately understand the consequences of doing so. Second, strengthening social relationships is critical for wellbeing, meaning that a reluctance to engage more deeply with others may leave people being less social than would be optimal

for their own wellbeing. Being willing to dig a little deeper than one might normally go in conversation brings the opportunity to create a stronger sense of connection with others, especially with strangers. The world that Schopenhauer described of prickly porcupines existing a moderate distance from each other describes a social life that *could be*, not the one that *has to be*.

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(Appendix follows)

Appendix

Intimacy Ratings by Question

Index	Question	M_{intimacy} (SD_{intimacy})
S01	What do you think about the weather today?	1.21 (2.11)
S02	How often do you come here?	1.97 (2.06)
S03	How did you celebrate last Halloween?	2.14 (2.09)
S04	How often do you get your hair cut? Where do you go? Have you ever had a really bad haircut experience?	2.39 (2.13)
S05	What is the best TV show you've seen in the last month? Tell your partner about it.	2.68 (2.31)
S06	When was the last time you walked for more than an hour? Describe where you went and what you saw.	2.69 (2.19)
S07	Do you like to get up early or stay up late? Why?	2.89 (1.93)
S08	Do you have anything planned for later today? When are you going to do it?	3.22 (2.01)
S09	Can you describe a conversation you had with another person earlier today?	3.30 (2.14)
S10	What's your daily routine like?	4.40 (1.85)
D01	What would constitute a "perfect" day for you?	4.75 (2.38)
D02	Where is somewhere you've visited that you felt really had an impact on who you are today?	5.24 (1.94)
D03	If you were going to become a close friend with the other participant, please share what would be important for him or her to know.	6.35 (1.99)
D04	If a crystal ball could tell you the truth about yourself, your life, the future, or anything else, what would you want to know?	6.38 (2.12)
D05	For what in your life do you feel most grateful? Tell the other participant about it.	6.47 (1.96)
D06	Is there something you've dreamed of doing for a long time? Why haven't you done it?	6.50 (2.10)
D07	What is one of the more embarrassing moments in your life?	6.83 (1.88)
D08	What is one of your most meaningful memories? Why is it meaningful for you?	7.29 (2.02)
D09	Can you describe a time you cried in front of another person?	7.39 (2.16)
D10	If you could undo one mistake you have made in your life, what would it be and why would you undo it?	7.82 (1.98)

Note. Intimacy ratings by question. Numbers outside parentheses denote means. Numbers inside parentheses denote standard deviations. S01 through S10 denote shallow questions in ascending order of intimacy. D01 through D10 denote deep questions in ascending order of intimacy.

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