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IT'S SURPRISINGLY NICE TO MEET YOU:
AN EXPECTANCY-VALUE THEORY OF PEOPLE'S SOCIAL ENGAGEMENT DECISIONS

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Overview

Connecting with others enhances one's health and happiness, yet people routinely forego opportunities to socially engage because they expect these interactions to unfold less positively than they do. In this dissertation I propose (Chapter 1), and test (Chapters 2-5), an expectancy-value theory to understand why people are overly avoidant in their social interactions. The theory predicts that a person's interest in engaging is guided by the perceived likelihood that engaging would lead to specific outcomes (*expectancies*) and by how much value they expect to attach to these outcomes (*values*). People mismanage their social relationships because they underestimate how social others will be during an interaction, expect others to derive less value from the warmth (vs. competence) of one's actions than others do, and overlook the influence of the communication medium on the outcomes of an interaction. People's miscalibrated expectancies may lead them to be less social than would be ideal for their well-being.

In Chapter 2, I examine how wisely people choose *whether* to engage. Participants expected strangers to be less social during conversation than close others or oneself, but later reported that the strangers they spoke with were more social than expected (Experiment 1). These miscalibrated beliefs may create a barrier to engaging: Participants reported being especially likely to engage when they expected others to be highly social *and* expected to attach high value to others' responses (Experiments 2a-5). In contrast, I found mixed evidence that uncertainty about others' interest creates a barrier to engaging independent of people's expectations (Experiments 3a-5).

In Chapter 3, I examine how wisely people choose *how* to engage. Interactive communication media, such as back-and-forth conversations, should foster stronger connections than non-interactive media such as voice messages. However, people may not focus on the

medium when assessing the consequences of engaging. Consistent with these hypotheses, participants established stronger connections through interactive than non-interactive media (Experiments 6-8b), especially when discussing areas of disagreement (Experiment 7). However, participants did not anticipate differences between these media (Experiments 6-7, 8b). People may undervalue interactive media when choosing how to engage.

In Chapter 4, I examine how wisely people choose *what* to talk about. People may withhold personal details about themselves because they expect others to react negatively to this content. However, participants underestimated how social others would be during conversation, and they consequently overestimated the awkwardness of deep conversation (Experiments 9-10). They also expected others to care less about the warmth of one's self-disclosures than others did, causing them to overestimate the reputational costs of revealing negative secrets (Experiments 11-12). People may be overly reluctant to open up to others.

In Chapter 5, I test whether calibrating people's expectancies removes a barrier to engaging. Participants preferred deeper conversations (Experiments 13a-b) and were more likely to reveal negative secrets (Experiment 14) when they expected others to respond favorably. Calibrating people's expectancies may lead them to engage in ways that strengthen their connections and enhance their well-being.

Finally, in Chapter 6, I discuss open questions and propose directions for future research.

Chapter 1: Expectancy-Value Theory of Social Engagement

Abstract

Connecting with others and building meaningful relationships enhances one's health and happiness, yet people routinely forego opportunities to socially engage because they expect these interactions to unfold less positively than they do. I propose an expectancy-value theory to understand when, and why, people are overly avoidant in their social interactions. The theory predicts that a person's interest in socially engaging is guided by their assessment of the probability that engaging would lead to specific outcomes (*expectancies*) and by how much value they attach to these outcomes (*values*). The expectancy of an outcome depends partly on how *social* you expect another person to be and how competent you expect your actions to seem to the person. People are likely to mismanage their social relationships for three reasons: They underestimate how social others will be during conversation; they expect others to derive less value from the warmth (vs. competence) of one's actions than others do; and they overlook the influence of the communication medium on the outcomes of an interaction. People's miscalibrated expectancies may lead them to be less social than would be ideal for their own and others' well-being.

Imagine that you're flipping through the pages of your high school yearbook when you see the photo of an old friend. You lost touch many years ago and haven't heard from your friend since graduating. How interested do you think your friend would be in reconnecting? If you were to reach out, would your friend be more interested in making small talk or discussing deeper and more revealing subject matter? How happy would you feel with your exchange after discussing an area of agreement versus an area of disagreement?

In daily life, people face many such decisions when they consider engaging with others. Existing research suggests that people routinely overlook the positive outcomes that result from socially engaging: For example, people underestimate how much they would enjoy talking with strangers (Dunn, Biesanz, Human, & Finn, 2007; Epley & Schroeder, 2014) and members of other ethnic groups (Mallett, Wilson, & Gilbert, 2008); they underestimate the benefits of connecting through spoken (vs. written) communication media (Kumar & Epley, 2020a) and prolonging spoken conversations with new acquaintances (Kardas, Schroeder, & O'Brien, 2020). They also underestimate the benefits of sharing meaningful content by engaging in deep conversations (Kardas, Kumar, & Epley, 2020a), revealing personal secrets (Kardas, Kumar, & Epley, 2020b), expressing gratitude to others (Kumar & Epley, 2018), giving compliments (Zhao & Epley, 2020; Zhao & Epley, in press), and communicating openly and honestly (Levine & Cohen, 2018). Having satisfying interactions with others can enhance feelings of social connectedness (Baumeister & Leary, 1995) and relieve stress and anxiety (Pennebaker, Barger, & Tiebout, 1989; Slepian & Moulton-Tetlock, 2019). Missed opportunities to connect may undermine a person's overall health and happiness (Ryan & Deci, 2000; Diener & Seligman, 2002; Holt-Lunstad, 2018).

However, there exists no unifying theory to explain why, or in which contexts, people may be overly reluctant to engage with others. In this dissertation, I propose an expectancy-value theory to explain the psychological determinants of people's social engagement decisions as well as features of the social context that predict the extent to which people manage their engagement opportunities wisely (Chapter 1). I also examine several novel contexts in which people may misunderstand the consequences of socially engaging (Chapters 2-4) and test whether these misunderstandings create a psychological barrier to engaging with others (Chapter 5).

Managing one's relationships effectively may be difficult for two sets of reasons. One reason is that social interaction is dynamic: The outcome of any exchange depends not only on one person's actions but on an *inter*action between two people. Interactions are inherently more complex than actions and so the outcome of an interaction may be particularly difficult to predict (Epley & Kardas, 2020). The second reason is that social life creates a "wicked" environment in that people receive more informative feedback about the accuracy of their expectations when they engage with others than when they avoid others (Eiser & Fazio, 2013; Hogarth, Lejarraga, & Soyer, 2015). Without receiving feedback, people may be unlikely to distinguish potentially threatening contexts where avoiding others is warranted from more friendly contexts where avoiding others is unnecessary or even detrimental to one's well-being.

Although the scope of the theory is broad, the theory is intended to model people's social engagement *decisions* and not all instances of social engagement. A person who calls out your name or taps you on the shoulder may elicit an automatic response that does not reflect an assessment of the consequences of engaging (Bargh & Ferguson, 2000). You may interact more often with your neighbors than with more distant others because you encounter your neighbors more often by chance (Glaeser & Sacerdote, 2000) and not because you make deliberate choices

to engage with them. The current theory outlines the psychological determinants of people's engagement decisions when they explicitly consider whether to reach out to others.

One way to assess whether people's engagement choices are mistaken is to observe the relationships that people form when they do *not* make these choices for themselves. People prefer to be friends with similar others (McPherson, Smith-Lovin, & Cook, 2001; Schug, Yuki, Horikawa, & Takemura, 2009), and yet the strongest determinant of friendship formation is not similarity but propinquity—that is, how close one lives to a specific person (Godley, 2008). People readily form friendships across racial and other demographic boundaries when dissimilar others they live nearby (Denrell, 2005; Nahemow & Lawton, 1975). People's deliberate choices of relationship partners may not be markedly better than chance pairings (Eastwick & Finkel, 2008).

Expectancy-Value Theory of People's Social Engagement Decisions

In daily life, people may be overly reluctant to engage with others not because they are uninterested in reaching out but because they expect these interactions to unfold systematically less favorably than they do. Understanding why people are hesitant to socially engage therefore requires understanding the mechanism through which people's expectations about engaging translate into their engagement decisions.

I theorize that people choose to engage with others when their interest in socially engaging exceeds their interest in remaining socially *dis*engaged and keeping to themselves. In turn, a person's interest in socially engaging is determined by the set of outcomes that are activated at the time of judgment—that is, the potential consequences of socially engaging that capture the person's attention—and by two mediating inferences about each of these outcomes: *expectancy* and *value* (Ajzen, 2012; Fishbein & Ajzen, 1975; Wigfield, 1994; Wigfield & Eccles,

2000). *Expectancy* is your assessment of the probability that engaging with another person would lead to a specific outcome. You might believe that calling your friend from high school would be likely to lead to an engaging conversation (high expectancy) and would be unlikely to lead to an awkward silence (low expectancy). You might believe that asking your manager for a pay raise would be likely to prompt productive negotiations (high expectancy) and would be unlikely to elicit an outright refusal (low expectancy). In contrast, *value* is your assessment of how much value you would attach to any given outcome. You might expect to place high value on negotiating a pay raise or having an engaging conversation with your friend but low value on being refused higher pay or experiencing an awkward silence. In this way, people's engagement decisions are driven by their *beliefs* about the consequences of engaging and not necessarily the actual consequences of doing so (Becker, 1993). Misunderstanding how others are likely to respond may lead people to behave in ways that are consistent with their present beliefs but are nonetheless suboptimal for their relationships.

Note that the value of an outcome reflects how much the person values the outcome itself and not necessarily the momentary happiness the person expects to feel at the end of the interaction (Kahneman, 2000). People engage with one another for many reasons apart from maximizing their immediate happiness, and these include creating happiness for others (Zaki & Mitchell, 2013), forming or strengthening their social connections (Baumeister & Leary, 1995), initiating romantic relationships (Sprecher, Wenzel, & Harvey, 2018), expanding their professional networks (Mitchell, Schlegelmilch, & Mone, 2016), learning from others (Bandura, 1977), and influencing others (Cialdini & Goldstein, 2004). In fact, people in some cultures prefer *not* to feel excessively happy (Joshanloo & Weijers, 2014). The value of any outcome thus

reflects the extent to which the outcome satisfies the person's goals, whether or not those goals include enhancing one's momentary happiness.

Expectancies and values should combine in a multiplicative fashion (expectancy × value) to determine a person's interest in socially engaging, such that an outcome is weighted more heavily to the extent that you perceive the outcome to be highly likely (Nagengast et al., 2011). You may expect to place high value on receiving a pay raise, for example, but will be relatively disinterested in requesting higher pay to the extent that your manager seems unlikely to grant your request. Thus, underestimating how likely others are to respond favorably can create a psychological barrier to pursuing interactions that you might otherwise value highly.

Whereas the expectancy and value of an outcome should powerfully influence a person's interest in socially engaging, I theorize that *uncertainty* about others' responses—that is, the extent to which both positive and negative outcomes are perceived as relatively likely during the engagement decision—is unlikely to impact one's interest in engaging independent of the expectancy × value relation described above. People hesitate to pursue opportunities that feel relatively uncertain (Ellsberg, 1961), but this aversion to uncertainty is stronger when people explicitly compare certain opportunities with uncertain ones (Fox & Tversky, 1995). In the context of social engagement, people may be unlikely to spontaneously compare a relatively uncertain opportunity, such as conversing with a stranger, with a relatively certain opportunity, such as conversing with a friend, at the moment of the engagement decision. Uncertainty about others may therefore be a less powerful barrier to engaging compared to underestimating how favorably others will respond once you have engaged with them.

This theory makes several important contributions. First, the theory bridges two relatively distant literatures within psychology. One large literature examines the psychology of people's

approach and avoidance decisions—that is, their decisions to engage with others. Existing theories explain how a person's motives and goals (Elliot, 2008; Elliot, Gable, & Mapes, 2006; Gable, 2006) or expectations about others' responses (Mehrabian, 1976; Miller & Turnbull, 1986; Schlenker & Leary, 1982) guide their approach decisions. Other theories explain the psychological determinants of specific decisions to reveal secrets (Afifi & Steuber, 2009) or share other personal information (Stiles, 1987). Existing theories, however, do not explain whether people engage with others in suboptimal ways that undermine the quality of their social relationships. A second large body of work examines the consequences of social connection versus social isolation for one's happiness and health (Baumeister & Leary, 1995; Holt-Lunstad, Smith, & Layton, 2010). The current theory bridges these literatures: I document psychological processes that determine whether people choose to engage with others and demonstrate why these processes may lead people to mismanage their social relationships to the detriment of their well-being.

Second, the theory separately discusses the psychological processes that determine how people expect others to respond during an interaction (expectancies) and those that determine how much value people expect to attach to these responses (values). As I will discuss, the psychological barriers that keep people from being more social arise largely from social judgment errors and not affective forecasting errors (Wilson & Gilbert, 2005; Van Boven, Loewenstein, Dunning, & Nordgren, 2013). The theory thus outlines two channels through which people may mismanage their social relationships and offers testable predictions about the (mis)judgments that keep people from engaging with others more wisely.

Third, the theory reconciles seemingly conflicting findings from prior research, some of which suggest contexts where people expect others to respond less favorably than they do (e.g.,

Bohns, 2016; Epley & Schroeder, 2014; Mallett, Wilson, & Gilbert, 2008) and some of which suggests contexts where people expect others to respond more favorably than they do (e.g., Scopelliti, Loewenstein, & Vosgerau, 2015; Sezer, Gino, & Norton, 2018). These misunderstandings are systematic in nature and the theory suggests that a small number of psychological mechanisms explain these disparate findings.

Finally, the theory provides practical guidance for people looking to enhance their social ties and well-being (Diener & Seligman, 2002; Holt-Lunstad, 2018). Many psychological barriers to forming stronger social connections arise not because people are uninterested in engaging with others but because they have miscalibrated expectancies about the consequences of doing so. In this way, the research findings reviewed here offer practical input for both individuals and policymakers (Holt-Lunstad, Robles, & Sbarra, 2017).

Outcome Activation

As discussed earlier, the theory aims to predict people's deliberate choices to engage with one another. Unlike social behaviors that are reflexive (Bargh & Ferguson, 2000) and interactions that are dictated by physical proximity (Glaeser & Sacerdote, 2000), people's discretionary interactions should be driven by a thoughtful assessment of the consequences of engaging. Thus, predicting these decisions requires discussing the psychological processes that trigger people to simulate specific outcomes that could result from engaging (activation) and those that determine how likely a person judges a specific outcome to be (expectancy) and how much value the person expects to attach to this outcome (value).

When people assess the consequences of engaging with others, they are likely to bring to mind outcomes that are relevant to their present goals (Higgins, 1996). These goals sometimes involve eliciting specific *psychological* responses from others, such as making another person

happy, leaving a positive impression on a person, or influencing another person's attitudes. A person who considers expressing gratitude to another person may envision the person feeling happy about one's expression or being relatively indifferent to it (Kumar & Epley, 2018). A person who considers revealing negative information may imagine the other person forming a harsh impression of them or a more favorable impression (Kardas, Kumar, & Epley, 2020b; Levine & Schweitzer, 2014, 2015; Wojciszke, 2005). As I will discuss later, expecting others to care less about the warmth of one's actions than others do may lead people to be less prosocial than would be ideal for their relationships.

People's goals can also involve eliciting specific *behavioral* responses from others. For example, a person who considers asking a stranger to use their phone may envision the person complying with or refusing the request (Flynn & Lake, 2008). A person who considers introducing themselves to somebody new may imagine the person talking with them or ignoring them (Epley & Schroeder, 2014). Underestimating how social another person's response is likely to be—that is, the extent to which the person will take interest in the content of the interaction—may likewise lead people to be less social than would be ideal for their own well-being.

Several goals may be coactivated at the time of the engagement decision (Köpetz, Faber, Fishbach, & Kruglanski, 2011), and so people may bring to mind several types of outcomes. For example, a person who considers asking a stranger to use their phone may envision not only the other person's possible behaviors, such as agreeing to the request versus refusing (Flynn & Lake, 2008), but also the person's impressions of oneself as a trustworthy versus untrustworthy individual. People have chronic goals to maintain a positive reputation (Baumeister & Leary, 1995; Eisenberger, 2015; Jones & Pittman, 1982; Leary, 1983; Leary, 2015; Leary & Baumeister, 2000; Leary & Kowalski, 1990; Schlenker & Leary, 1982; Vorauer, 2006) and to be

seen as competent by others (Abele & Wojciske, 2007; Brooks, Gino, & Schweitzer, 2015; Chaudhry & Loewenstein, 2019; Kumar & Epley, 2018). These concerns about others' evaluations of oneself tend to be more highly accessible when people speak with unfamiliar others (Britt, Boniecki, Vescio, Biernat, & Brown, 1996; Goff, Steele, & Davies, 2008; Sasaki & Vorauer, 2010; Stephan & Stephan, 1985; Vorauer, Hunter, Main, & Roy, 2000; Vorauer, Main, & O'Connell, 1998), are uncertain of others' current evaluations of them (Dunn, Biesanz, Human, Finn, 2007; Vorauer, 2006), or feel relatively powerless (Galinsky, Magee, Inesi, & Gruenfeld, 2006; Sheldon & Johnson, 1993). Concerns about others' psychological impressions are therefore likely to become coactivated even when a person's explicit goal is to elicit a specific behavior from another person.

Apart from outcomes that are activated by a person's goals, specific outcomes can also be activated by properties of the engagement opportunity itself (Higgins, 1996). Seeing a member of a different ethnic group, for example, may activate concerns about how favorably the person would evaluate oneself (Vorauer, 2006). Seeing a person who appears angry may trigger thoughts about the person's potential for behaving aggressively (Marsh, Ambady, & Kleck, 2005). Entering a setting where you have conversed with others in the past may trigger thoughts about how these conversations previously unfolded (Bruner, 1957; Epley & Schroeder, 2014).

Finally, thoughts about potential negative outcomes should be more likely to become activated immediately before engaging. People experience greater anxiety immediately before socially engaging (Trope & Liberman, 2010; Van Boven, Loewenstein, & Dunning, 2005; Van Boven, Loewenstein, Welch, & Dunning, 2012), and these feelings of anxiety may lead people to simulate others' negative responses more so than their positive ones (Gilovich, Kerr, & Medvec,

1993; Hsee, Tu, Lu, & Ruan, 2014; Mayer, Gaschke, Braverman, & Evans, 1992; Savitsky, Medvec, Charlton, & Gilovich, 1998; Schwarz, 2011).

Outcome Expectancy

After a person brings an outcome to mind, they need to assess the probability of this outcome (expectancy) and how much value they expect to attach to this outcome (value). I first discuss how people assess the expectancy of a specific outcome.

Expectancies of Others' Psychological Responses

Some outcomes concern others' psychological responses to one's actions including others' happiness, impressions of oneself, or attitudes toward a specific issue. These psychological responses tend to be relatively automatic (Duckworth, Bargh, Garcia, & Chaiken, 2002) and so the perceived likelihood of a specific psychological response should be driven by how competently one's action is expected to satisfy another person's goals. For example, people expect others to feel more appreciative after receiving desirable gifts than undesirable ones (Zhang & Epley, 2012) because desirable gifts are more competently selected. People expect others to form more favorable impressions after receiving positive (vs. negative) information about the behavior of a relationship partner (Kardas, Kumar, & Epley, 2020b) because positive revelations strengthen a social relationship that another person cares about (Baumeister & Leary, 1995).

Importantly, people have incomplete knowledge of others' goals and so are likely to infer others' goals egocentrically using knowledge of one's own goals. People are highly concerned with their own competence (Abele & Wojciszke, 2007; Chaudhry & Loewenstein, 2019) and so may expect signals of their *own* competence to be highly valued by others as well (Abele & Wojciszke, 2007; Epley, Keysar, Van Boven, & Gilovich, 2004). For example, people expect

their compliments and their expressions of gratitude to create relatively little happiness for recipients unless this content is competently articulated (Kumar & Epley, 2018; Zhao & Epley, 2020a, 2020b). People are reluctant to seek advice from others in part because they expect that doing so would cause them to seem relatively incompetent (Brooks, Gino, & Schweitzer, 2015). As I will outline later, people may systematically underestimate how much others care about warm actions that can strengthen a social relationship, and this may lead people to engage in fewer prosocial actions than would be ideal for their relationships.

Expectancies of Others' Behavioral Responses

In contrast, other outcomes concern others' behavioral responses including their decisions to provide help, engage oneself in conversation, or offer advice. Others' behaviors are likely to be more controlled (Ajzen, 1985), and so the perceived likelihood that others engage in a specific behavior should depend on a wider range of judgments about another person's goals and intentions. I theorize that the expectancy of a specific behavioral response is determined by how much value the *other person* derives from this response, how much value *you* derive from this response, and how *social* you expect the other person to be during the exchange—that is, the extent to which the other person will care how much value you will derive from their response. Whereas both social and indifferent others should seem more likely to respond in ways that *they* value than those they do not, social others should seem more likely than indifferent others to respond in ways that *you* value as well.

For these reasons, people should form different patterns of expectancies for social versus indifferent others. When people consider engaging with others who seem indifferent to oneself, such as strangers and outgroup members (Haslam, 2006; Waytz, Gray, Epley, & Wegner, 2010), people should expect others' behaviors to be guided largely by self-interest—that is, the

expectancy of a specific response should depend considerably on how much value the *other person* derives from this response but little on how much value *you* derive from this response. For example, people expect strangers to be more likely to refuse large requests for help than small ones (Flynn & Lake, 2008) because others attach more negative value to a large request and are expected to be indifferent to one's own needs. People expect distant others to be relatively uninterested in one's self-disclosures of either superficial or intimate information (Kardas, Kumar, & Epley, 2020a) because others derive little value from hearing these details and are expected to be indifferent to how much value you attach to discussing them.

In contrast, when people consider engaging with others who seem interested in oneself, such as close friends and family (Clark & Mills, 2011), people should expect others' responses to be guided partly by prosocial concern for oneself—that is, the expectancy of a specific response should depend not only on how much value the *other person* derives from the response but also on how much value *you* derive from this response. For example, people perceive close others to be relatively likely to comply with significant requests for help (Deri, Stein, & Bohns, 2019) because close others are expected to care about one's needs. People expect close others to take greater interest in one's self-disclosures of intimate information than superficial information (Kardas, Kumar, & Epley, 2020a) because close others are expected to care about content that is highly relevant to oneself.

People's expectancies of others' behaviors depend critically on how social others are expected to be while interacting. Predicting these expectancies therefore requires discussing the psychological processes through which people infer how social others will be. I review the psychological determinants of these inferences below.

Reinforcement learning. People should form expectations about others' sociality using similar psychological processes as those through which they infer others' mental states and capacities more generally (Epley & Kardas, 2020; Epley & Waytz, 2010). People form expectations about others' sociality partly by learning from experience: Your history of interacting with a specific person, or members of a specific group, reveals their interest in engaging with you (Epley & Schroeder, 2014). Learning that takes place through direct experience tends to be relatively enduring (Hackel, Doll, & Amodio, 2015; Hackel & Zaki, 2018) and informs one's beliefs about the person's interest in engaging with oneself in the future (Newcomb, 1956; Lott & Lott, 1974). Thus, people should be more likely to engage with others who have displayed interest in them in the past than those who have not.

Importantly, people learn more from engaging with others than from avoiding others: Interacting with others provides direct feedback about their sociality whereas avoiding others preserves one's initial belief about another person's sociality. As I will discuss later, differences in the feedback that people receive from approaching versus avoiding others may help to explain why people expect distant others to be less social than they are.

Egocentric simulation. Absent direct experiences engaging with another person, people need to predict others' sociality indirectly through other psychological processes. People tend to use their own mental states as a guide for inferring others' mental states, especially when they perceive themselves to be similar to others (Ames, 2004a; 2004b; O'Brien & Ellsworth, 2012; Robbins & Krueger, 2005). This process, known as egocentric simulation, involves anchoring on one's own perspective and then adjusting for perceived differences between one's own and the other person's perspective (Epley, Keysar, Van Boven, & Gilovich, 2004). These adjustments tend to be insufficient, however, and so people's inferences about others' perspectives tend to be

systematically biased in the direction of one's own (Chambers, Epley, Savitsky, & Windschitl, 2008).

For example, trusting individuals perceive others to be relatively more trustworthy (e.g., Slepian, Young, & Harmon-Jones, 2017) than individuals who are relatively less trusting. People high in loneliness perceive the social environment to be relatively more threatening and expect their interactions to unfold more negatively (Cacioppo & Hawkley, 2009; Hawkley & Cacioppo, 2010; Newall, Chipperfield, Clifton, Perry, Swift, & Ruthig, 2009) compared to those who feel connected. Men who feel sexually aroused tend to perceive greater arousal in the faces of attractive women than those who are not aroused (Maner et al., 2005). Thus, people may infer similar others' interest in engaging partly by using their own interest as a guide.

Stereotyping. When people feel relatively dissimilar to others, they are less likely to simulate others' perspectives and more likely to apply stereotypes to infer others' dispositions and mental states (Ames, 2004a; 2004b). People perceive members of some groups to be more warm and caring than others: For example, people perceive elderly people, middle-class people, and disabled people to be relatively warm. They perceive rich people, homeless people, and welfare recipients to be less warm (Cuddy, Fiske, & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002). People tend to categorize others effortlessly in terms of the groups they belong to (Kawakami, Young, & Dovidio, 2002; Payne, 2005) and so stereotypes about the warmth of these groups may readily inform one's inferences about the sociality of a specific group member.

Behavioral inference. Finally, people's expectations about others' sociality are also informed by knowledge of their behavior. Knowledge of others' behavior tends to quickly supplant inferences from other cues such as the person's group membership (Kunda, Davies,

Adams, & Spencer, 2002), particularly if the person reveals their thoughts and feelings directly through their voice (Schroeder, Kardas, & Epley, 2017).

Although people infer a wide range of characteristics from others' behavior, each of these inferences relies on similar psychological processes: People observe others' behavior, form an inference about the person's disposition or mental state, and correct this inference based on their knowledge of the situational constraints that may also have caused the person's behavior (Gilbert, Pelham, & Krull, 1988; Quattrone, 1982). Inferences about others' mental states and dispositions tend to be relatively effortless whereas corrections based on situational constraints tend to be more effortful, however, and so people's judgments of others' characteristics tend to be systematically biased in the direction of the person's observable behavior (Gilbert & Malone, 1995).

The same psychological processes should inform people's expectations about others' sociality. In settings where people tend to remain disengaged from one another, such as buses and trains, people tend to infer that others are uninterested in engaging and expect that others would be relatively unlikely to respond to them during conversation (Epley & Schroeder, 2014; Shelton & Richeson, 2005). As I will discuss later, people may overlook constraints that keep others from behaving more socially, leading people to underestimate others' underlying sociality.

Outcome Value

A person's interest in engaging is guided not only by their expectancies of different outcomes that could result from engaging but also by the value they expect to attach to these outcomes. The value of any outcome should be governed by the extent to which the outcome satisfies goals that are activated during the engagement decision.

As discussed earlier, some outcomes concern others' psychological responses to one's action, including others' happiness, impressions of oneself, or attitudes toward a specific issue. The value that one attaches to others' psychological responses should be determined by the *valence* of those responses relative to one's goals. For example, people are more interested in expressing gratitude or giving a compliment when they expect others to feel highly (vs. moderately) happy upon receiving the gesture (Kumar & Epley, 2018; Zhao & Epley, 2020). People are more interested in transparently revealing negative information about themselves when they expect others to form a moderately (vs. severely) negative impression (Kardas, Kumar, & Epley, 2020b). People are more interested in delivering a persuasive argument when they expect disagreeing others to reverse their stance on the issue (Bechler, Tormala, & Rucker, 2020).

In contrast, other outcomes concern others' behavioral responses to one's action, such as another person's decision to offer advice or to engage oneself in conversation. The value of another person's behavioral response should be determined by the *competence* of that response relative to one's goals. For example, people are more interested in seeking advice from experts than from novices (Abele & Brack, 2013; Wojciszke, 2005) because experts are expected to provide more competent guidance. People are more interested in sharing sensitive information with trustworthy others (Wojciszke, 2005) because trustworthy others are perceived to be more capable of keeping a secret. People are more interested in talking with strangers who seem willing to engage them in conversation (Epley & Schroeder, 2014; Shelton & Richeson, 2005) because conversing with others brings enjoyment more readily than being ignored. In this way, the "competence" of another person's response is context sensitive and refers to the extent to which the person's response is expected to satisfy one's goals for the interaction.

Finally, a person's psychological distance from the engagement opportunity should also influence the perceived value of an outcome. People expect future events to lead to less intense emotion compared to present events (Kassam, Gilbert, Boston, & Wilson, 2008; Nordgren, Banas, & MacDonald, 2011) and may consequently expect to attach more extreme positive or negative value to an outcome during the moments immediately leading up to the interaction.

Attribute	*Psychological Determinants*
Outcome activation	During the engagement decision, the likelihood that a specific outcome becomes activated is determined by: • The relevance of the outcome to your chronic and situational goals • The relevance of the outcome to the current engagement opportunity

Outcome expectancy	The expectancy that engaging will elicit a specific psychological response from the other person is determined by:
	• How competently your action is expected to satisfy the person's goals
	
	The expectancy that engaging will elicit a specific behavioral response from the other person is determined by:
	• How much value the *other* person derives from this response
	• How much value *you* derive from this response
	• How social you expect the other person to be
	  ○ Another person's expected sociality is determined by:
	  ▪ Reinforcement learning
	  ▪ Behavioral inference
	  ▪ Egocentric simulation
	  ▪ Stereotyping

Outcome value	The value that you expect to derive from a specific psychological response is determined by: • The valence of that response relative to your goals The value that you expect to derive from a specific behavioral response is determined by: • The expected competence of that response relative to your goals
Engagement decision	The decision to engage is determined by a comparison between: • Your interest in socially engaging (outcome expectancy × outcome value) ---versus--- • Your interest in remaining socially disengaged

Table 1. Psychological determinants of people's social engagement decisions.

Causes of Interpersonal Mismanagement

A person's interest in engaging should be determined by the expectancies and values of the outcomes that are activated during the engagement decision. People are likely to mismanage their social relationships when they have miscalibrated expectancies about how an interaction is likely to unfold. I next discuss three reasons why people's expectancies are systematically miscalibrated: People (i) expect others to derive less value from the warmth of one's actions than others do, (ii) underestimate how social others are likely to be during an interaction, and (iii) overlook the influence of the communication medium on the outcomes of an interaction.

Underestimating Others' Favorable Evaluations of Actions That Convey One's Warmth

As described earlier, people's expectancies of others' psychological responses, including others' feelings of happiness, impressions of oneself, or attitudes toward a specific issue, should be driven by how competent one's action is expected to seem relative to another person's goals. People possess incomplete knowledge of others' goals, however, and so are likely to infer others' goals egocentrically using knowledge of one's own goals.

This psychological process should lead people to misjudge others' evaluations of a wide range of actions. People are highly concerned about their own competence (Abele & Wojciszke, 2007; Chaudhry & Loewenstein, 2019) and so may egocentrically expect signals of their competence to be highly valued by others as well (Epley, Keysar, Van Boven, & Gilovich, 2004). However, others tend to care more about one's warmth (Abele & Wojciszke, 2007), in part because warm and friendly behaviors have the potential to strengthen a social relationship (Baumeister & Leary, 1995).

This disconnect leads to two specific hypotheses. First, people should underestimate how favorably others judge actions that sincerely convey one's warmth. Consistent with this

hypothesis, people expect their compliments and their gratitude expressions—actions that convey one's warmth directly to a recipient—to create less happiness for recipients than these gestures actually do. This occurs in part because people egocentrically expect others' reactions to be driven by how competently they articulate themselves whereas others' reactions are actually driven more by the warmth of the gesture itself. In turn, these miscalibrated expectancies lead people to withhold sincere compliments and expressions of gratitude, consistent with the expectancy-value mechanism (Kumar & Epley, 2018; Zhao & Epley, 2020).

Second, people should overestimate how favorably others respond to actions that directly convey one's competence. Consistent with this hypothesis, people expect others to judge them more favorably after bragging than others do. This occurs because people egocentrically expect others to share in one's happiness and pride, whereas others attend more to the (lack of) warmth conveyed by the decision to brag about oneself (Scopelliti, Loewenstein, & Vosgerau, 2015; Sezer, Gino, & Norton, 2018). Similarly, narcissistic individuals—who are especially interested in being perceived as competent—leave systematically more negative impressions over time (Leckelt, Küfner, Nestler, & Back, 2015), presumably because recipients detect narcissists' deliberate attempts to impress them and form increasingly negative impressions of their warmth. Egocentric reasoning may cause people to systematically misunderstand others' evaluations of warm versus competent actions.

Underestimating Others' Sociality

As outlined earlier, people's expectancies of others' behaviors are partly determined by how social they expect others to be during an interaction. Underestimating others' sociality should therefore cause people to expect others to respond less favorably in the midst of

interaction than others do. In the following sections, I discuss why the psychological processes outlined earlier should cause people to underestimate others' sociality.

Reinforcement learning. As discussed earlier, people's past experiences engaging with others influence their present expectations about others' sociality. In contexts where people make deliberate choices to engage with others, people may underestimate others' sociality because falsely negative impressions of others tend to be self-fulfilling whereas falsely positive impressions tend to be self-correcting (Denrell, 2005; Fazio, Eiser, & Shook, 2004; Eiser & Fazio, 2008; Snyder, Tanke, & Berscheid, 1977). Consider the context of dating: Two people who experience an (unusually) boring conversation during their first date are unlikely to continue dating, and so their excessively negative impressions of one another are likely to endure. In contrast, two people who experience an (unusually) engaging conversation during their first date are likely to choose to continue dating, and so their excessively positive impressions are likely to be corrected over time. People may therefore form more negative average impressions of their dating partners compared to others' objective characteristics.

The same mechanism should cause people to underestimate how social the average stranger is. People are likely to have unusually friendly encounters with some strangers and unusually hostile encounters with others, and each of these experiences should influence the person's momentary expectations of distant others' sociality. Whereas falsely positive expectations are likely to be corrected as the person continues to engage with other strangers over time, falsely negative expectations are likely to endure because the person may instead choose to avoid strangers indefinitely. People should thus expect the average stranger to be systematically less social than they are (Denrell, 2005). In contrast, people are likely to form more calibrated expectations of friends and family because interactions with close others are

likely to be dictated less by choice and more by proximity or convenience (Glaeser & Sacerdote, 2000).

The same mechanism—where falsely negative expectations are more likely to be self-fulfilling than falsely positive expectations—may also create a barrier to learning how others are likely to respond to specific kinds of engagements. Expecting a deep and intimate conversation to feel awkward may lead people to engage in fewer deep conversation and more shallow ones, undermining their well-being (Mehl et al., 2010; Milek et al., 2018). Expecting others to be indifferent to an expression of gratitude (Kumar & Epley, 2020a), a compliment (Zhao & Epley, 2020), or a random act of kindness (Kumar & Epley, 2020b) may keep people from gaining the experiences necessary to learn how happy these gestures would make others feel. People's engagement decisions are guided by their beliefs about the consequences of engaging. The expectancy-value mechanism thus creates a powerful barrier to distinguishing contexts in which one's negative expectations about engaging are warranted from those in which these negative expectations are systematically miscalibrated (Eiser & Fazio, 2013; Hogarth, Lejarraga, & Soyer, 2015).

Behavioral inference. People may also underestimate others' sociality because others' behavior does not transparently signal their underlying interest in engaging. As discussed earlier, people often infer others' characteristics from their behavior and then correct these inferences based on situational constraints that may also have caused the behavior (Gilbert, Pelham, & Krull, 1988; Quattrone, 1982). People tend to adjust their inferences too little for these situational constraints (Gilbert & Malone, 1995), however, and so their judgments of others' mental states and dispositions tend to be biased in the direction of others' actions.

One important constraint on social engagement is a concern for being rejected or judged harshly by others (Leary, 1983; Leary & Baumeister, 2000). People may be interested in engaging with others but choose not to reach out because they are concerned about being judged negatively. People may thus attribute their own inaction to fears of rejection but others' inaction to lack of interest in engaging. This can lead to a state of pluralistic ignorance where each person falsely assumes that they are more interested in connecting than those around them (Prentice & Miller, 1993).

Existing research finds evidence of this phenomenon in several contexts. People are reluctant to engage with distant strangers on trains and buses (Epley & Schroeder, 2014), to talk with members of other ethnic groups (Shelton & Richeson, 2005), and to initiate romantic relationships (Vorauer & Ratner, 1996) in part because they infer that from others' behavior that others are less interested than they actually are. Mistaken inferences from others' behavior lead people to systematically underestimate others' sociality, causing people to behave less socially than they themselves would otherwise prefer.

As outlined earlier, people's predictions about others' sociality comprise an important determinant of their expectancies—that is, the perceived likelihood that engaging with another person will lead to a specific outcome. Underestimating others' sociality may therefore create an unwarranted barrier to several kinds of engagements. For example, people may be reluctant to initiate deep conversations with strangers because they are concerned that strangers would be relatively indifferent to either superficial or intimate information about oneself (Kardas, Kumar, & Epley, 2020a). They may withhold requests for help because they mistakenly expect strangers' responses to be guided more by the personal costs of helping than by their concern for one's needs (Flynn & Lake, 2008). Engaging with others may trigger them to be highly social, but a

tendency to underestimate others' sociality may explain why people are reluctant to engage in positive ways that would be beneficial to one's well-being and relationships.

Overlooking the Context of the Interaction

Whereas the previous sections review attributes of the engagement decision that people attend to but misunderstand in systematic ways, people may also fail to attend to relevant features of the engagement opportunity that influence the outcomes of an interaction. One such feature is the communication medium of the interaction. The communication medium is a feature of the social context that may be less likely to capture a person's attention before engaging. If media vary in the extent to which they enable people to behave socially toward one another while interacting, people may underutilize communication media that enable greater sociality.

Two features of communication media may be particularly influential in determining how socially people can behave toward one another. One feature is the presence or absence of paralinguistic cues, such as pace and intonation, that are conveyed by a person's voice. Spoken media such as face-to-face conversations, video calls, phone calls, and voice messages are more *social* than written media because paralinguistic cues convey a person's capacities for thinking and feeling (Schroeder, Kardas, & Epley, 2017), signal one's trustworthiness (Roghanizad & Bohns, 2017), and clarify the meaning of otherwise ambiguous statements (Kruger, Epley, Parker, & Ng, 2005). These properties of spoken communication therefore allow people to form stronger social connections than they do through written media (Kumar & Epley, 2020a).

A second important feature is the extent to which the medium provides moment-to-moment feedback. Interactive media such as face-to-face conversations, video calls, phone calls, and written chat rooms are more social than non-interactive media such as voice messages and emails. Interactive media allow people to respond to one another, ask follow-up questions

(Yeomans, Brooks, Huang, Minson, & Gino, 2019), tailor their statements to another person's knowledge or beliefs (Echterhoff, Higgins, & Levine, 2009), express empathic concern for each other's experiences (Batson, Duncan, Ackerman, Buckley, & Birch, 1981), and engage in nonverbal communication (Chartrand & Baaren, 2009). People therefore establish more common ground and form stronger social connections when engaging through these media (Kardas & Epley, 2020).

Although voice-based and interactive communication media are fundamentally more social than text-based and non-interactive media, person's expectancies should be relatively insensitive to the medium through which they expect to engage with a person, leading people to underestimate the benefits of engaging through highly social media. The expectancy-value mechanism therefore predicts that people may underutilize these highly social communication media.

Several findings find evidence that overlook the benefits of engaging through voice-based and interactive communication media. People expect to communicate as clearly through written media as through spoken media despite that their statements are more transparently clear in speech (Kruger, Epley, Parker, & Ng, 2005; see also Epley, Keysar, Van Boven, & Gilovich, 2004; Keysar, 1994; Keysar & Bly, 1995; Keysar & Henly, 2002). They expect to form similarly strong connections through either written or spoken media but experience stronger connections after speaking with others (Kumar & Epley, 2020a). They expect to leave equally favorable impressions by either speaking or writing about themselves but are judged as significantly more intelligent after speaking (Schroeder & Epley, 2015). They perceive others to be equally likely to comply with requests made in-person and over email despite that others are far more likely to comply with in-person requests (Roghanizad & Bohns, 2017). People expect to establish similar

amounts of common ground through interactive and non-interactive media but later experience greater common ground through interactive media that enable dialogue (Kardas & Epley, 2020).

People naturally overlook the communication medium as a determinant of the likelihood that an interaction unfolds positively. The expectancy-value theory therefore predicts that people will underutilize highly social communication media that entail spoken communication and moment-to-moment responding.

Psychological mechanism	*Moderating variable*	*Decision*	*Pattern of behavior*
Reinforcement learning	Initial expectations	*Whether* to engage *What* to talk about	Initially negative expectations about engaging with distant others, or discussing specific content, lead to avoidance and prevent people from learning.
Behavioral inference	Sociality of others' behavior	*Whether* to engage *What* to talk about	In contexts where others display low (vs. high) sociality, people are overly reluctant to engage and to discuss personally relevant content.
Egocentric simulation	Warmth vs. competence of one's action	*What* to talk about	People are overly reluctant to engage in warm (vs. competent) actions toward others.
Attention to content versus context	Communication medium	*How* to engage	People engage less often through voice-based (vs. text-based) and interactive (vs. non-interactive) communication media than would be optimal.

Table 2. Causes of interpersonal mismanagement.

Chapter 2: *Whether* to Engage

Abstract

The expectancy-value theory predicts that people systematically underestimate others' sociality. This misunderstanding matters to the extent that people's beliefs about other's sociality guide their engagement decisions. Eight experiments suggest that people underestimate how social distant others can be and that this misunderstanding creates a psychological barrier to being more social. Participants expected distant strangers to be less social during conversation compared to close others or oneself, but later reported that the strangers with whom they conversed were significantly more social than they expected (Experiment 1). Underestimating distant others' sociality matters because these miscalibrated inferences guide people's engagement decisions: Participants reported being especially likely to engage with others when they *both* expected others' responses to be highly social and expected to attach high value to these responses (Experiments 2a-5). Although outcome expectancies and values were a powerful determinant of participants' interest in engaging, I found only mixed evidence that uncertainty about others' interest creates a barrier to engaging independent of people's expectations (Experiments 3a-5). Underestimating others' sociality may lead people to be less social toward distant others than would be ideal for one's own well-being.

According to the expectancy-value theory, people systematically underestimate others' sociality—that is, how interested and caring others will be while engaging with oneself. This misunderstanding matters to the extent that people's beliefs about others' sociality guide their decisions to engage with others.

Therefore, I conducted eight experiments to examine how wisely people choose *whether* to engage with others. Experiment 1 tests whether people are more likely to underestimate distant strangers' sociality compared to close others' sociality or one's own. Experiments 2a-5 test whether this misunderstanding creates a barrier to engaging: I manipulate (Experiments 2a-b) or measure (Experiments 3a-5) the expectancy and value of an outcome and test whether people are more interested in engaging when they perceive positively valued outcomes to be highly likely. Experiments 3a-5 test whether being uncertain of others' interest leads people to remain disengaged from one another, independent of the expected consequences of engaging.

Experiment 1: Underestimating (Distant) Others' Sociality

The expectancy-value theory predicts that people systematically underestimate others' sociality. I first tested whether people are selectively more likely to underestimate distant strangers' sociality compared to close others' sociality or one's own. Whereas people are likely to infer their own sociality by introspecting (Pronin, Berger, & Molouki, 2007) and close others' sociality from their experiences engaging with them directly (Newcomb, 1956; Lott & Lott, 1974), people are likely to form expectations about distant others' sociality indirectly from other cues such as their behavior (Epley & Schroeder, 2014; Mallett, Wilson, & Gilbert, 2008; Pronin, Berger, & Molouki, 2007). Strangers may remain disengaged from one another partly because they are concerned about being ignored or rejected by others, yet misinterpret *others'* inaction as a sign of disinterest (Leary, 1983; Leary & Baumeister, 2000; Prentice & Miller, 1993; Shelton

& Richeson, 2005). Thus, people may have relatively well calibrated beliefs about their own and close others' sociality but systematically underestimate how social distant strangers are likely to be.

To test these hypotheses, participants in Experiment 1 were paired with either a distant stranger or a close other and received a series of personally intimate conversation questions. Before speaking, they predicted how social they and the other person would be during the conversation. After speaking, they reported how social they and the other person actually were. I hypothesized that participants who spoke with a distant stranger would expect the other person to be relatively indifferent compared to oneself, whereas those who spoke with a close other would expect that both they themselves and the other person would be relatively social and caring. I also hypothesized that after speaking, participants in both conditions would report that both they and the other person were highly social during the conversation. People may therefore be especially likely to underestimate how social distant strangers are.

Method

Participants. I targeted 100 pairs of participants after exclusions and finished recruiting once I reached this target. I achieved this by recruiting 106 pairs from several public parks (N = 200 individuals after exclusions; M_{age} = 35.23; SD_{age} = 15.43; 64.50% female; 63.00% Caucasian) to complete the study in exchange for a $5 gift card. I excluded 6 pairs from analyses: In 1 pair, a third person joined the ongoing conversation; in 1 pair, both participants smoked marijuana immediately before beginning the procedure; in 3 pairs, one participant did not report predictions until after the conversation; and in 1 pair, the participants discussed the dependent measures while responding to those measures. Among 100 participants in the "close other" condition, 20% reported that they were friends, 23% reported that they were spouses, 30%

reported that they were dating, 23% reported that they were family members, 1% reported that they were acquaintances, 2% reported that they were colleagues, and 1% 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. After consenting, participants in the "close-other" condition reported how close or connected they currently felt to the other person (0 = *not at all close and connected*; 10 = *extremely close and connected*).

In both conditions, participants were told that they would speak with one another by discussing several questions. Participants then read the conversation questions:

> (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) Can you tell me about one of the last times you cried in front of another person?
>
> (4) If you could undo one mistake you have made in your life, what would it be and why would you undo it?

After reading the questions, participants reported their expectations about how the conversation would unfold. First they predicted how social they personally would be during the conversation on a three-item scale: They predicted how interested they would be in the other person's responses (0 = *not at all*; 10 = *extremely*), how much they would empathize with what the other person shares with them (0 = *not at all*; 10 = *quite a bit*), and how much they would

care about and feel concerned or engaged with what the other person says during the conversation (0 = *not at all*; 10 = *quite a bit*). Participants then predicted how social the other person would be during the conversation on the same three-item scale. Participants then predicted how awkward the conversation would feel (0 = *not at all*; 10 = *extremely*), how much they would enjoy the conversation (0 = *not at all*; 10 = *quite a bit*), and how happy they would feel about the conversation (0 = *not at all*; 10 = *extremely*).

Participants then discussed the conversation questions, and after finishing their discussions, reported their actual experiences on the same measures. Finally, participants reported demographic information and received payment.

Results

The interest, empathy, and care measures were highly correlated for both oneself ($\alpha_{predictions}$ = .92, $\alpha_{experiences}$ = .88) and one's partner ($\alpha_{predictions}$ = .97, $\alpha_{experiences}$ = .94), and so I collapsed these items to form a sociality scale.

Consistent with my predictions, participants underestimated how social their partner would be more than they underestimated how social they themselves would be, and this pattern was especially pronounced in the distant-stranger condition. I performed a 2 (relationship: distant stranger, close other) × 2 (target: self, other) × 2 (evaluations: predictions, experiences) ANOVA with repeated measures on the second and third factors and the sociality scale as the dependent variable. The three-way relationship × sociality × evaluations interaction effect was significant, $F(1, 98) = 6.85$, $p = .010$, $\eta_p^2 = .07$ (see Figure 1).

To decompose the three-way interaction effect, I performed 2 (target: self, other) × 2 (evaluations: predictions, experiences) ANOVAs with the sociality scale as the dependent measure, separately for the distant-stranger and close-other conditions. In the distant-stranger

condition, I found a significant main effect of target, $F(1, 49) = 119.06$, $p < .001$, $\eta_p^2 = .71$, indicating that participants reported higher sociality for themselves than for their conversation partner, and a significant main effect of evaluations, $F(1, 49) = 138.29$, $p < .001$, $\eta_p^2 = .74$, indicating that participants underestimated sociality. These main effects were qualified by a significant target × evaluations interaction effect, $F(1, 49) = 13.39$, $p < .001$, $\eta_p^2 = .21$, indicating that participants underestimated the other person's sociality significantly more than they underestimated their own.

These findings attenuated in the close-other condition: There was a non-significant main effect of target, $F(1, 49) = 2.79$, $p = .101$, $\eta_p^2 = .05$, a significant main effect of evaluations, $F(1, 49) = 6.28$, $p = .016$, $\eta_p^2 = .11$, indicating that participants underestimated sociality, and a non-significant target × evaluations interaction effect, $F(1, 49) = 0.64$, $p = .426$, $\eta_p^2 = .01$. Participants underestimated others' sociality more than they underestimated their own, and this finding was significantly stronger for distant strangers than close others.

I then examined the measures of awkwardness, enjoyment, and happiness. Participants overestimated how awkward they would feel during their conversations, $F(1, 98) = 57.99$, $p < .001$, $\eta_p^2 = .37$, and consistent with my predictions, this pattern was especially pronounced in the distant-stranger condition relative to the close-other condition, $F(1, 98) = 4.06$, $p = .047$, $\eta_p^2 = .04$. Whereas participants in the distant-stranger condition expected their conversations to feel more awkward ($M = 4.52$, $SD = 2.04$) relative to those in the close-other condition ($M = 3.23$, $SD = 2.60$), $t(98) = -2.76$, $p = .007$, 95% $CI_{difference} = [-2.22, -0.36]$, $d = -0.55$, experiences of awkwardness did not differ significantly (Ms = 2.25 vs. 1.91, respectively; SDs = 1.87 vs. 2.02), $t(98) = -0.87$, $p = .385$, 95% $CI_{difference} = [-1.11, 0.43]$, $d = -0.17$.

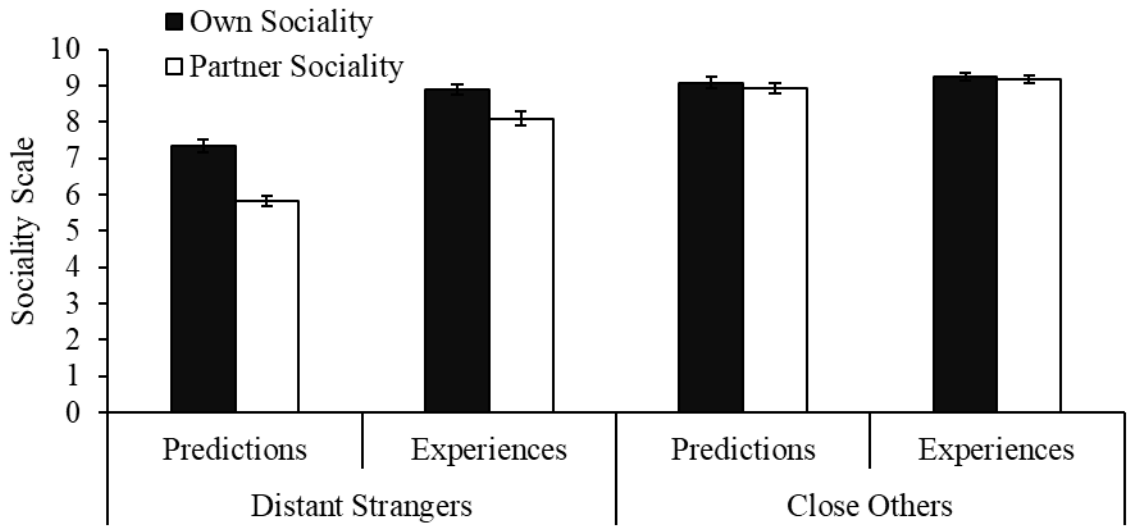

Figure 1. Mean sociality scale ratings across relationship (distant stranger vs. close other), target (own sociality vs. partner sociality), and evaluations (predictions vs. experiences). Error bars ±1 *SE* (Experiment 1).

Participants also underestimated how much they would enjoy their conversations, $F(1, 98) = 72.20$, $p < .001$, $\eta_p^2 = .42$, and consistent with my predictions, this finding was especially pronounced in the distant-stranger condition relative to the close-other condition, $F(1, 98) = 24.92$, $p < .001$, $\eta_p^2 = .20$. Whereas participants in the distant-stranger condition expected their conversations to feel less enjoyable ($M = 6.63$, $SD = 1.70$) relative to those in the close-other condition ($M = 8.46$, $SD = 1.54$), $t(98) = 5.64$, $p < .001$, 95% $CI_{difference} = [1.19, 2.47]$, $d = 1.13$, experiences of enjoyment did not differ significantly (Ms = 8.99 vs. 8.67, respectively; SDs = 1.38 vs. 1.21), $t(98) = 1.23$, $p = .220$, 95% $CI_{difference} = [-0.19, 0.83]$, $d = 0.25$.

Finally, participants underestimated how happy they would feel about their conversations, $F(1, 98) = 82.92$, $p < .001$, $\eta_p^2 = .46$, and consistent with my predictions, this finding was especially pronounced in the distant-stranger condition relative to the close-other

condition, $F(1, 98) = 24.87$, $p < .001$, $\eta_p^2 = .20$. Whereas participants in the distant-stranger condition expected to feel less happy about their conversations ($M = 6.60$, $SD = 1.43$) relative to those in the close-other condition ($M = 8.36$, $SD = 1.43$), $t(98) = 6.15$, $p < .001$, 95% $CI_{difference}$ = [1.19, 2.33], $d = 1.23$, experiences of happiness did not differ significantly (Ms = 8.55 vs. 8.93, respectively; SDs = 1.30 vs. 1.43), $t(98) = 1.39$, $p = .167$, 95% $CI_{difference}$ = [-0.16, 0.92], $d = 0.28$.

Discussion

Participants in Experiment 1 were especially likely to underestimate distant strangers' sociality compared to close others' sociality or one's own. As a result, they also expected their conversations with distant strangers to feel more awkward and less enjoyable, and to lead to less happiness, than these conversations actually did.

Experiments 2a-b: Expectancy × Value as a Determinant of Social Engagement

Underestimating others' sociality should create a psychological barrier to engaging with others to the extent that others' expected sociality guides one's engagement decisions. In Experiments 2a-b, I independently manipulated the expectancy and value of an outcome in hypothetical scenarios and measured participants' interest in engaging with another person. Participants imagined having an opportunity to pursue a job during a networking event (Experiment 2a) or having an opportunity to chat with somebody new (Experiment 2b). I hypothesized that participants would report being especially likely to engage when they *both* expected the other person to be highly social and expected to place high value on the outcome of the interaction. This pattern of results would suggest that underestimating others' sociality acts as a barrier to socially engaging.

Method (Experiment 2a)

Participants. I recruited 475 participants from Amazon Mechanical Turk (N = 398 individuals after exclusions; M_{age} = 37.90; SD_{age} = 12.02; 53.77% female; 79.40% Caucasian) to complete the study in exchange for $0.30. I excluded 77 participants from analyses because they failed an attention check.

Procedure. Participants imagined that they were looking for a new job and were attending a networking event where they would have the chance to speak with representatives from several businesses. Participants were then randomly assigned to one cell in a 2 (value: low, high) × 2 (expectancy: low, high) × 2 (target gender: male, female) between-participants design. Every participant viewed two headings, "INTEREST IN PURSUING AN INTERVIEW" and "CHANCES OF GETTING AN INTERVIEW", and I manipulated the descriptions that participants read beneath these headings.

To manipulate the value of interviewing with the company, participants read the following description beneath the "INTEREST IN PURSUING AN INTERVIEW" heading (male target described below):

> "Imagine that a business representative walks into the event. You're already familiar with his organization: they offer high [low] pay, strong [weak] employee benefits, and have healthy [unhealthy] working conditions. You feel extremely interested [uninterested] in pursuing an interview with this organization."

To manipulate the expectancy that the representative would offer an interview, participants read the following description beneath the "CHANCES OF GETTING AN INTERVIEW" heading (male target described below):

> "Then imagine that this person sits down, smiles [frowns], and looks around at the professionals attending the event [begins shuffling through a pile of papers in his briefcase]. The person does not seem to be busy at all [seems to be quite busy right now]. You sense that he would be very likely [unlikely] to offer you an interview if you introduced yourself and delivered your job pitch at this moment."

After reading these descriptions, participants completed two manipulation checks: For the value manipulation, participants reported how interested they were in pursuing an interview with this person's organization (0 = *not at all*; 10 = *very much*). For the expectancy manipulation, participants imagined introducing themselves and delivering their job pitch, and reported how likely the person would be to offer them an interview (0 = *not at all*; 10 = *extremely*).

After responding to the manipulation checks, participants completed the primary measure by reporting how likely they would be to introduce themselves and deliver their job pitch (0 = *not at all likely*; 10 = *extremely likely*). They then completed two attention checks by reporting which value manipulation (*I am UNINTERESTED in pursuing an interview with this person's organization* vs. *I am INTERESTED in pursuing an interview with this person's organization*) and which expectancy manipulation (*The person would be very UNLIKELY to offer me an interview* vs. *The person would be very LIKELY to offer me an interview*) they read in the earlier descriptions. Participants then reported whether they had ever attended a networking event before (*yes* vs. *no*) and how often they attend networking events (*never* vs. *about once every few years* vs. *about once every few months* vs. *about once every few weeks* vs. *at least once per week*).

Finally, participants reported demographic information and received payment.

Method (Experiment 2b)

Participants. I recruited 422 participants from Amazon Mechanical Turk (N = 354 individuals after exclusions; M_{age} = 37.51; SD_{age} = 11.89; 54.39% female; 75.99% Caucasian) to complete the study in exchange for $0.30. I excluded 68 participants from analyses because they failed an attention check.

Procedure. Participants imagined that they were commuting to work when another person took the last seat on the train right next to them. Participants were then randomly assigned to one cell in a 2 (value: low, high) × 2 (expectancy: low, high) × 2 (target gender: male, female) between-participants design. Every participant viewed two headings, "ENJOYMENT" and "WILLINGNESS TO TALK", and I manipulated the descriptions that participants read beneath these headings.

To manipulate the value of having a back-and-forth conversation, participants read the following description beneath the "ENJOYMENT" heading (male target described below):

> Imagine that a person you've never seen before walks through the doors of the train car. As the person walks down the aisle, he makes eye contact with several passengers and gives them a smile [glares around and scowls at several passengers]. He seems to be quite caring and friendly [hostile and unfriendly]. You sense that having a back-and-forth conversation with this person would be very pleasant and enjoyable [unpleasant and unenjoyable].

To manipulate the expectancy that the other person would be willing to engage them in a back-and-forth conversation, participants then read the following description beneath the "WILLINGNESS TO TALK" heading (male target described below):

> Then imagine that this person takes the last seat on the train right next to you. As the person sits down, he looks in your direction and tries to make eye contact with you [avoids making eye contact with you and immediately takes out his phone]. You sense that the person wants to talk [doesn't want to talk right now] and would be very likely [unlikely] to respond if you said hello and tried to start a conversation with him.

After reading these descriptions, participants completed two manipulation checks: For the value manipulation, participants reported how much they thought they would enjoy having a back-and-forth conversation with the other person (0 = *not at all*; 10 = *very much*). For the expectancy manipulation, participants imagined saying hello and trying to start a conversation with the other person, and reported how likely the other person would be to respond and engage them in a back-and-forth conversation (0 = *not at all likely*; 10 = *extremely likely*).

After responding to the manipulation checks, participants completed the primary measure by reporting how likely they would be to say hello to the other person and try to start a conversation (0 = *not at all likely*; 10 = *extremely likely*). They then completed two attention checks by reporting which value manipulation (*I sensed that talking with the person would be unpleasant and unenjoyable* vs. *I sensed that talking with the other person would be pleasant and enjoyable*) and which expectancy manipulation (*I sensed that the person would be very unlikely to respond if I said hello and tried starting a conversation* vs. *I sensed that the person would be very likely to respond if I said hello and tried starting a conversation*) they read in the earlier descriptions. Participants then reported whether they had ever ridden a train before (*yes* vs. *no*) and how often they ride the train (*never* vs. *about once every few years* vs. *about once*

every few months vs. *about once every few weeks* vs. *about once every few days* vs. *at least once per day*).

Finally, participants reported demographic information and received payment.

Results (Experiment 2a)

A 2 (expectancy: low, high) × 2 (value: low, high) × 2 (target gender: male, female) ANOVA with the likelihood of engaging measure as the dependent variable did not reveal any significant main effects or interaction effects of target gender, Fs(1, 390) ≤ 1.16, ps ≥ .283, η_p^2s ≤ .003. I therefore collapsed across this factor in the following analyses.

The manipulations were effective: Participants perceived the other person to be more likely to offer them an interview in the high-expectancy conditions (M = 8.14, SD = 1.62) than the low-expectancy conditions (M = 3.42, SD = 2.30), t(396) = 23.74, p < .001, 95% $CI_{difference}$ = [4.33, 5.12], d = 2.38, and were more interested in interviewing with the company in the high-value conditions (M = 8.33, SD = 2.30) than the low-value conditions (M = 1.05, SD = 1.82), t(396) = 34.61, p < .001, 95% $CI_{difference}$ = [6.87, 7.70], d = 3.48. Although I manipulated the other person's perceived willingness to talk and expected enjoyment independently of one another, the manipulations were nonetheless positively correlated in the manipulation check measures, r = .26, t(396) = 5.30, p < .001, 95% CI = [.16, .35]. I therefore pooled the data across the four conditions and tested the primary hypotheses using two sets of regression analyses: one using the experimental manipulations as independent variables and the other using the manipulation checks as independent variables.

First, I regressed participants' reported likelihood of engaging simultaneously over the expectancy manipulation, the value manipulation, and their interaction. I observed a significant effect of expectancy, b = -3.13, SE = 0.35, t(394) = -8.90, p < .001, 95% CI = [-3.82, -2.43],

indicating that participants reported being more likely to engage when they perceived the person to be likely to offer them an interview, and a significant effect of value, b = -5.84, SE = 0.36, t(394) = -16.05, p < .001, 95% CI = [-6.55, -5.12], indicating that participants reported being more likely to engage when they were interested in interviewing for the company. As theorized, I also observed a significant expectancy × value interaction effect, b = 2.37, SE = 0.52, t(394) = 4.56, p < .001, 95% CI = [1.35, 3.39], indicating that participants were especially likely to engage when they both perceived the other person to be likely to offer them an interview and were interested in interviewing with this company (see Figure 2).

The positive correlation between the expectancy and value manipulations should systematically strengthen the main effects and weaken the interaction effect in the prior analysis. I therefore conducted a follow-up analysis by regressing participants' reported likelihood of engaging simultaneously over the perceived chances that the person would offer them an interview (the expectancy manipulation check), the participant's reported interest in interviewing with this company (the value manipulation check), and their interaction. I observed a non-significant main effect of expectancy, b = -0.04, SE = 0.05, t(394) = -0.76, p = .450, 95% CI = [-0.14, 0.06], but a significant main effect of value, b = 0.12, SE = 0.06, t(394) = 2.12, p = .034, 95% CI = [0.01, 0.24], indicating that participants reported being more likely to engage when they were interested in interviewing with this company. Critically, I also observed a significant expectancy × value interaction effect, b = 0.08, SE = 0.01, t(394) = 9.08, p < .001, 95% CI = [0.06, 0.09], indicating that participants were especially likely to engage when they both perceived the other person to be likely to offer them an interview and were interested in interviewing with this company.

Results (Experiment 2b)

A 2 (expectancy: low, high) × 2 (value: low, high) × 2 (target gender: male, female) ANOVA with the likelihood of engaging measure as the dependent variable did not reveal any significant main effects or interaction effects of target gender, Fs(1, 346) ≤ 2.78, ps ≥ .096, η_p^2s ≤ .01. I therefore collapsed across this factor in the following analyses.

The manipulations were effective: Participants perceived the other person to be more willing to talk to them in the high-expectancy conditions (M = 7.85, SD = 2.16) than the low-expectancy conditions (M = 2.20, SD = 2.21), t(352) = 24.32, p < .001, 95% $CI_{difference}$ = [5.20, 6.11], d = 2.59, and expected to enjoy their conversations more in the high-value conditions (M = 6.76, SD = 2.05) than the low-value conditions (M = 1.44, SD = 1.78), t(352) = 26.07, p < .001, 95% $CI_{difference}$ = [4.92, 5.72], d = 2.77. The manipulations were positively correlated in the manipulation check measures, r = .49, t(352) = 10.56, p < .001, 95% CI = [.41, .57], and so I again performed separate sets of regression analyses using the experimental manipulations versus manipulation checks as independent variables.

First, I regressed participants' reported likelihood of engaging simultaneously over the expectancy manipulation, the value manipulation, and their interaction. I observed a significant effect of expectancy, b = -3.19, SE = 0.42, t(350) = -7.61, p < .001, 95% CI = [-4.01, -2.36], indicating that participants reported being more likely to engage when they perceived the other person to be willing to talk to them, and a significant effect of value, b = -2.89, SE = 0.40, t(350) = -7.28, p < .001, 95% CI = [-3.67, -2.11], indicating that participants reported being significantly more likely to engage when they expected the conversation to be enjoyable. Consistent with my predictions, I also observed a significant expectancy × value interaction effect, b = 1.41, SE = 0.58, t(350) = 2.45, p = .015, 95% CI = [0.28, 2.55], indicating that

participants were especially likely to engage when they both perceived the other person to be willing to talk to them and expected the conversation to be enjoyable (see Figure 2).

As noted earlier, the positive correlation between the expectancy and value manipulations should systematically strengthen the main effects and weaken the interaction effect in the prior analysis. I therefore conducted a follow-up analysis by regressing participants' reported likelihood of engaging simultaneously over the expectancy manipulation check, the value manipulation check, and their interaction. I observed a significant effect of expectancy, $b = 0.13$, $SE = 0.05$, $t(350) = 2.42$, $p = .016$, 95% CI = [0.02, 0.23], indicating that participants reported being more likely to engage when they perceived the other person to be willing to talk to them, and a non-significant effect of value, $b = 0.11$, $SE = 0.07$, $t(350) = 1.53$, $p = .128$, 95% CI = [-0.03, 0.26]. As expected, I also observed a significant expectancy × value interaction, $b = 0.06$, $SE = 0.01$, $t(350) = 5.52$, $p < .001$, 95% CI = [0.04, 0.08], indicating that participants reported being especially likely to engage when they both perceived the other person to be willing to talk to them and expected back-and-forth conversation to be enjoyable.

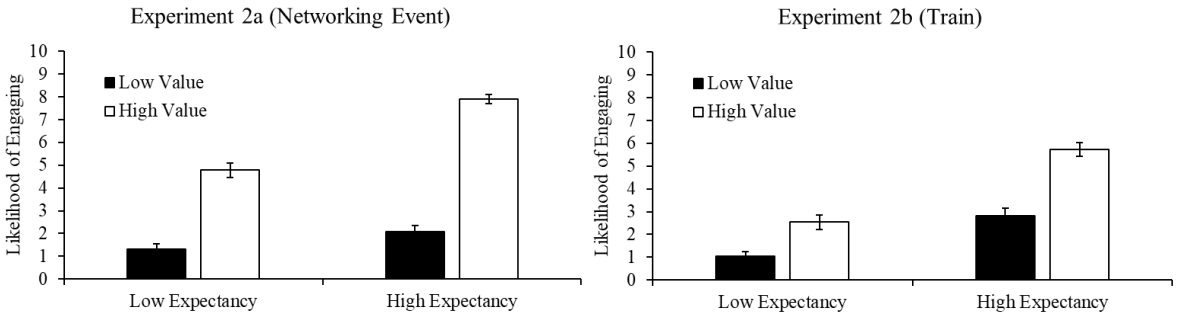

Figure 2. Mean likelihood of engaging across expectancy (low vs. high) and value (low vs. high). Error bars ±1 *SE* (Experiments 2a-b).

Discussion (Experiments 2a-b)

Consistent with my predictions, participants in Experiments 2a-b reported being especially likely to engage when they *both* perceived an outcome to be highly likely and expected to place high value on that outcome. Underestimating others' sociality may therefore create a psychological barrier to behaving more socially toward distant strangers.

Experiments 3a-c: Uncertainty as a Barrier to Social Engagement

Whereas Experiments 1-2b suggest that underestimating distant others' sociality may create a psychological barrier to socially engaging, I next tested another potential barrier to engaging: uncertainty. People may refrain from reaching out to distant others in part because they prefer not to engage when they feel uncertain about others' interest. People hesitate to pursue outcomes that feel relatively uncertain (Ellsberg, 1961; Gneezy, List, & Wu, 2006) because a sense of uncertainty causes people to feel less competent (Fox & Tversky, 1995) and may cause people to focus selectively on negative outcomes (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001).

However, an alternative hypothesis is that uncertainty about others' interest is not a powerful determinant of people's engagement decisions. People's aversion to uncertainty is stronger when they explicitly compare certain opportunities with uncertain ones (Fox & Tversky, 1995). People may be unlikely to spontaneously compare relatively uncertain engagement opportunities, such as talking with distant strangers, with relatively certain ones, such as talking with close friends, at the moment of a social engagement decision.

I conducted several experiments to examine the extent to which uncertainty about others' interest leads people to prefer to remain disengaged from one another. To do this, I manipulated participants' uncertainty about another person's interest in engaging in a hypothetical scenario

and measured their interest in talking to the person. Participants imagined having the opportunity to engage with another person in a waiting room (Experiment 3a), on a train (Experiments 3b, 4, 5), or at a cocktail party (Experiment 3c). Whereas three experiments found evidence that uncertainty about others' interest may reduce one's interest in engaging (Experiments 3a-c), two follow-up experiments did not (Experiments 4-5). I discuss the discrepancies among these results in the study introductions and discussion sections throughout this chapter.

Method (Experiment 3a)

Participants. I recruited 404 participants from Amazon Mechanical Turk (N = 355 individuals after exclusions; M_{age} = 36.24; SD_{age} = 11.42; 49.44% female; 71.47% Caucasian) to complete the study in exchange for $0.25. I excluded 49 participants from analyses because they failed an attention check.

Procedure. To assess how often each participant typically engages with strangers, participants first thought about times when they have sat in a waiting room before an appointment without friends or family. They reported how likely they would be to try starting a conversation with a stranger sitting nearby (0 = *not at all likely*; 10 = *extremely likely*).

Participants then read the hypothetical scenario in which they are sitting in a waiting room waiting to have their car inspected when a person they've never seen before walks through the door and sits down next to them. Participants were then randomly assigned to one cell in a 4 (target interest: interested, disinterested, neutral, uncertain) × 2 (target gender: male, female) between-participants design. Participants in the *interested* condition read that the person made eye contact with them and seemed interested in engaging. Those in the *disinterested* condition read that the person averted his or her eyes and seemed disinterested in engaging. Those in the *uncertain* condition read that they couldn't get a good look at the expression on the person's

face. Those in the *neutral* condition read that the person briefly made eye contact and had a neutral expression on his face. The full scenario in the "uncertain" condition with a male target read:

> Imagine you're sitting in a waiting room before having your car inspected by a local mechanic. A person who you've never seen before walks through the door of the waiting room and sits down next to you. As he takes his seat, you can't get a very good look at the expression on his face. You've never seen this person before, and it's not clear from what you've seen whether this is the kind of person who likes chatting with people or not.

After reading the scenario, participants imagined trying to start a conversation with the person and reported how likely the other person would be to respond (the expectancy of engaging: 0 = *not at all likely*; 10 = *extremely likely*). They then reported how likely they would be to try starting a conversation with the other person (0 = *not at all likely*; 10 = *extremely likely*) and how pleasant the conversation would be if they tried starting a conversation with the other person and he or she responded (the value of engaging: 0 = *not at all pleasant*; 10 = *extremely pleasant*).

Participants then completed an attention check by reporting how the other person behaved after sitting down next to them (*The person glared around the room and didn't smile at anyone* vs. *The person looked at me and gave a friendly smile* vs. *The person had a neutral expression on his/her face, and I made eye contact just briefly* vs. *I couldn't get a very good look at the expression on the person's face as he/she sat down*).

Finally, participants reported demographic information and received payment.

Method (Experiment 3b)

Participants. I recruited 403 participants from Amazon Mechanical Turk (N = 366 individuals after exclusions; M_{age} = 35.93; SD_{age} = 11.70; 55.07% female; 75.34% Caucasian) to complete the study in exchange for $0.25. I excluded 37 participants from analyses because they failed an attention check.

Procedure. Procedures were identical to Experiment 2a except that participants imagined the scenario in the context of a train car. For example, the scenario in the "uncertain" condition with a male target read:

> Imagine you're sitting on a train during your commute to work. A person who you've never seen before walks through the door and sits down next to you. As he takes his seat, you can't get a very good look at the expression on his face. You've never seen this person before, and it's not clear from what you've seen whether this is the kind of person who likes chatting with people or not.

Method (Experiment 3c)

Participants. I recruited 407 participants from Amazon Mechanical Turk (N = 346 individuals after exclusions; M_{age} = 36.49; SD_{age} = 11.90; 46.67% female; 76.81% Caucasian) to complete the study in exchange for $0.30. I excluded 61 participants from analyses because they failed an attention check.

Procedure. Procedures were identical to Experiment 2a except that participants imagined the scenario in the context of a cocktail party. For example, participants in the "uncertain" condition read:

> Imagine you're attending a cocktail party by yourself. A person who you've never seen before walks into the room and sits down next to you. As he takes his seat,

you can't get a very good look at the expression on his face. You've never seen this person before, and it's not clear from what you've seen whether this is the kind of person who likes chatting with people or not, and you're uncertain whether or not the person would be interested in talking with you.

Results (Experiment 3a)

In a 4 (target behavior: interested, disinterested, uncertain, neutral) × 2 (target gender: male, female) ANOVA with the participant's likelihood of trying to start a conversation as the dependent variable, I observed a significant main effect of target behavior, $F(3, 347) = 22.17$, $p < .001$, $\eta_p^2 = .16$, a non-significant main effect of target gender, $F(1, 347) = 2.59$, $p = .108$, $\eta_p^2 = .01$, and a non-significant target behavior × target gender interaction effect, $F(3, 347) = 1.19$, $p = .312$, $\eta_p^2 = .01$. Because the effects of target gender were non-significant, I collapsed across this factor for the following analyses.

Participants in the uncertain condition ($M = 2.30$, $SD = 2.73$) reported being less likely to try starting a conversation compared to those in the interested condition ($M = 4.46$, $SD = 3.00$), $t(351) = 5.31$, $p < .001$, 95% $CI_{difference} = [1.36, 2.96]$, $d = 0.79$, but more likely than those in the disinterested condition ($M = 1.37$, $SD = 2.14$), $t(351) = -2.25$, $p = .025$, 95% $CI_{difference} = [-1.74, -0.12]$, $d = -0.34$. Consistent with my predictions, participants' reported likelihood of engaging in the uncertain condition was closer to the disinterested condition ($d = 0.34$) than the interested condition ($d = 0.79$; see Figure 3). Moreover, participants in the uncertain condition reported being less likely to engage with the other person compared to participants in the neutral condition ($M = 3.70$, $SD = 2.98$), $t(351) = 3.40$, $p < .001$, 95% $CI_{difference} = [0.59, 2.21]$, $d = 0.51$. These findings suggest that uncertainty about others' interest may reduce people's willingness to engage with others independent of their expectancies about others' responses.

I also tested whether participants reported being especially likely to engage when they both expected the other person to respond to them *and* expected the conversation to feel pleasant—that is, I tested for the multiplicative relationship between the expectancy and value of engaging (Nagengast et al., 2011). I regressed participants' reported likelihood of engaging simultaneously over the perceived chances that the other person would respond (the expectancy of conversation), the expected pleasantness of back-and-forth conversation (the value of conversation), and their interaction. Because participants' ratings varied relatively little within each condition, I pooled the data across the four conditions for this analysis. I observed neither a main effect of expectancy, b = -0.17, SE = 0.12, $t(351)$ = -1.42, p = .157, 95% CI = [-0.39, 0.06], nor a main effect of value, b = 0.01, SE = 0.11, $t(351)$ = 0.14, p = .890, 95% CI = [-0.19, 0.22]. However, I observed a significant expectancy × value interaction effect, b = 0.10, SE = 0.02, $t(351)$ = 5.45, p < .001, 95% CI = [0.06, 0.13], indicating that participants reported being especially likely to engage when they both perceived the person to be likely to respond and expected the conversation to be pleasant.

Results (Experiment 3b)

In a 4 (target behavior: interested, disinterested, uncertain, neutral) × 2 (target gender: male, female) ANOVA with the participant's likelihood of trying to start a conversation as the dependent variable, I observed a significant main effect of target behavior, $F(3, 358)$ = 22.06, p < .001, η_p^2 = .16, a non-significant main effect of target gender, $F(1, 358)$ = 0.00002, p = .996, η_p^2 = .0000001, and a non-significant target behavior × target gender interaction effect, $F(3, 358)$ = 0.86, p = .464, η_p^2 = .01. Because the effects of target gender were non-significant, I collapsed across this factor for the following analyses.

Participants in the uncertain condition (M = 2.88, SD = 2.90) reported being less likely to try starting a conversation compared to those in the interested condition (M = 5.07, SD = 3.27), $t(362) = 4.95$, $p < .001$, 95% $CI_{difference}$ = [1.32, 3.06], d = 0.73, but more likely than those in the disinterested condition (M = 1.71, SD = 2.33), $t(362) = -2.59$, $p = .010$, 95% $CI_{difference}$ = [-2.07, -0.28], d = -0.39. Consistent with my predictions, participants' likelihood of engaging in the uncertain condition was closer to participants' likelihood of engaging in the disinterested condition (d = 0.39) than the interested condition (d = 0.73; see Figure 3). Moreover, participants in the uncertain condition reported being less likely to engage with the other person compared to participants in the neutral condition (M = 4.10, SD = 3.28), $t(362) = 2.71$, $p = .007$, 95% $CI_{difference}$ = [0.33, 2.10], d = 0.41. These findings again suggest that uncertainty about others' interest may reduce people's likelihood of engaging.

I also tested whether participants reported being especially likely to engage when they both expected the other person to respond to them *and* expected the conversation to feel pleasant. In regression analyses, I observed neither a main effect of expectancy, b = -0.12, SE = 0.12, $t(362) = -1.01$, $p = .314$, 95% CI = [-0.34, 0.11], nor a main effect of value, b = -0.04, SE = 0.11, $t(362) = -0.36$, $p = .719$, 95% CI = [-0.25, 0.17]. However, I again observed a significant expectancy × value interaction effect, b = 0.10, SE = 0.02, $t(362) = 5.95$, $p < .001$, 95% CI = [0.07, 0.14], indicating that participants reported being especially likely to engage when they both perceived the person to be likely to respond and expected the conversation to be pleasant.

Results (Experiment 3c)

In a 4 (target behavior: interested, disinterested, uncertain, neutral) × 2 (target gender: male, female) ANOVA with the participant's likelihood of trying to start a conversation as the dependent variable, I observed a significant main effect of target behavior, $F(3, 338) = 31.46$, $p <$

.001, η_p^2 = .22, a marginally significant effect of target gender, $F(1, 338) = 2.86$, $p = .092$, η_p^2 = .01, 95% $CI_{difference}$ = [-0.22, 1.11], $d = 0.14$, and a non-significant target behavior × target gender interaction effect, $F(3, 338) = 0.31$, $p = .817$, $\eta_p^2 = .003$. Because the effects of target gender were non-significant, I collapsed across this factor for the following analyses.

Participants in the uncertain condition ($M = 4.35$, $SD = 3.05$) reported being less likely to try starting a conversation compared to those in the interested condition ($M = 6.44$, $SD = 2.76$), $t(342) = 4.89$, $p < .001$, 95% $CI_{difference}$ = [1.24, 2.92], $d = 0.74$, but more likely than those in the disinterested condition ($M = 2.89$, $SD = 2.86$), $t(342) = -3.39$, $p < .001$, 95% $CI_{difference}$ = [-2.32, -0.62], $d = -0.52$. Consistent with my predictions, participants' likelihood of engaging in the uncertain condition was closer to participants' likelihood of engaging in the disinterested condition ($d = 0.52$) than the interested condition ($d = 0.74$; see Figure 3). Moreover, participants in the uncertain condition reported being less likely to engage with the other person compared to participants in the neutral condition ($M = 6.21$, $SD = 2.59$), $t(342) = 4.21$, $p < .001$, 95% $CI_{difference}$ = [0.99, 2.72], $d = 0.66$. These findings again suggest that uncertainty about others' interest may reduce people's likelihood of engaging.

I also tested whether participants reported being especially likely to engage when they both expected the other person to respond to them *and* expected the conversation to feel pleasant. In regression analyses, I observed a main effect of expectancy, $b = 0.27$, $SE = 0.13$, $t(342) = 2.18$, $p = .030$, 95% CI = [0.03, 0.52], indicating that participants reported being more likely to engage to engage when they perceived the person to be likely to respond, and a non-significant main effect of value, $b = 0.13$, $SE = 0.12$, $t(342) = 1.15$, $p = .249$, 95% CI = [-0.09, 0.36]. I also observed a significant expectancy × value interaction effect, $b = 0.05$, $SE = 0.02$, $t(342) = 2.85$, $p = .005$, 95% CI = [0.02, 0.09], indicating that participants reported being especially likely to

engage when they both perceived the person to be likely to respond and expected the conversation to be pleasant.

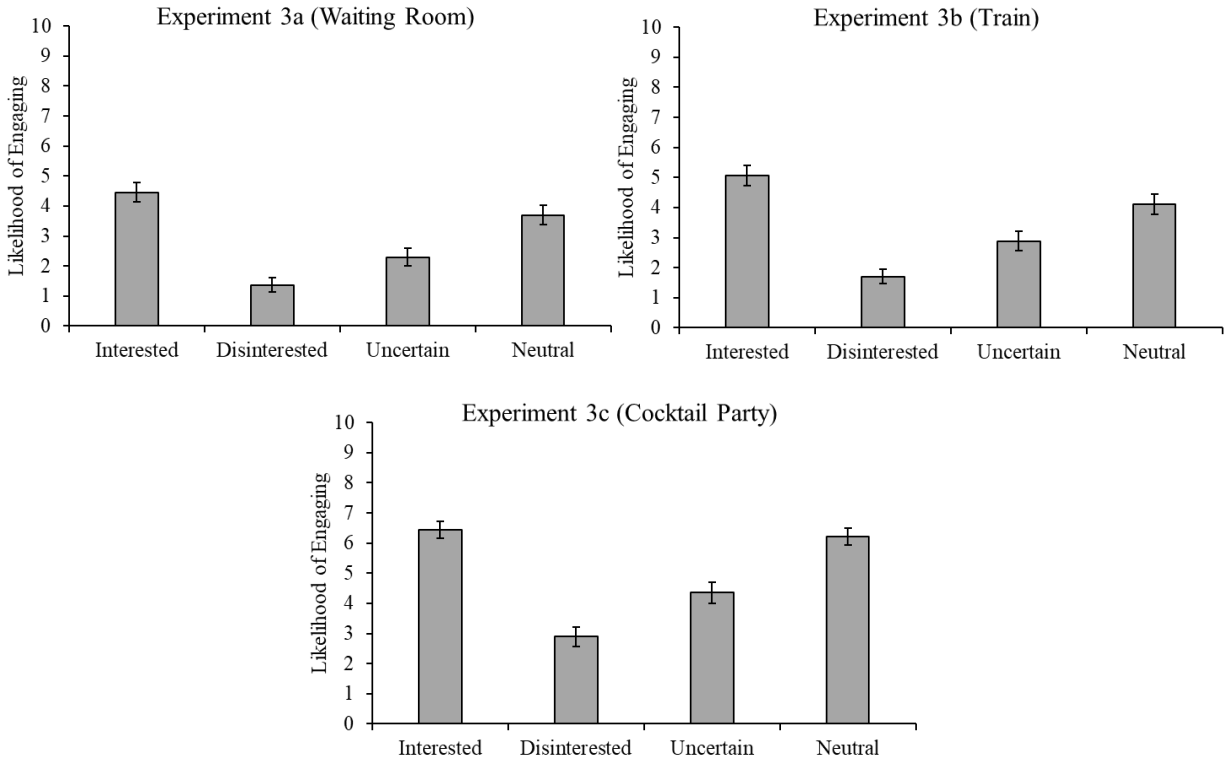

Figure 3. Mean likelihood of engaging across target behavior (disinterested vs. interested vs. neutral vs. uncertain). Error bars ±1 *SE* (Experiments 3a-c).

Discussion (Experiments 3a-c)

Experiments 3a-c provide initial evidence that uncertainty may create a barrier to socially engaging independent of people's expectancies about others' responses. Participants who read that they were uncertain of another person's interest reported being less likely to engage than those in a neutral condition who perceived the person to be neither interested nor disinterested in engaging. Uncertainty about others' interest may be one reason that people behave less socially than would be ideal for their own well-being.

Moreover, these experiments find further evidence of the expectancy-value mechanism: Participants reported being especially likely to engage when they perceived an outcome to be highly likely *and* placed high value on the outcome. Underestimating others' sociality, and thus the expectancy of a positive outcome, should therefore create a barrier to behaving more socially.

Experiment 4: Manipulating Uncertainty Through Lack of Knowledge

One limitation of the prior experiments is that participants in the uncertain conditions read explicitly that they felt "uncertain" of the other person's level of interest. If participants interpreted this description to indicate that the person seemed relatively suspicious or untrustworthy, then these inferences about the person's disposition—and not their sense of uncertainty—could explain why participants reported being unlikely to engage with the person.

I therefore conducted Experiment 4 using a different manipulation of uncertainty. In this experiment, participants in the uncertain condition read that they looked out the window and did not see how the other person behaved as they walked down the aisle of the train car.

Participants. I recruited 402 participants from Amazon Mechanical Turk (N = 362 individuals after exclusions; M_{age} = 38.45; SD_{age} = 11.93; 50.83% female; 80.94% Caucasian) to complete the study in exchange for $0.30. I excluded 40 participants from analyses because they failed an attention check.

Procedure. The procedure was identical to Experiment 2b except for the manipulation in the "uncertain" condition. Participants in the uncertain condition with a male target read:

> Imagine you're sitting on a train during your commute to work. A person who you've never seen before walks through the door and enters the train car. Then you glance out your window and can't see how he behaves as he walks down the

aisle. You therefore don't get a sense of whether he's the kind of person who likes chatting with people or not.

Results

In a 4 (target behavior: interested, disinterested, uncertain, neutral) × 2 (target gender: male, female) ANOVA with the participant's likelihood of trying to start a conversation as the dependent variable, I observed a significant main effect of target behavior, $F(3, 354) = 12.93$, $p < .001$, $\eta_p^2 = .10$, a marginally significant effect of target gender, $F(1, 354) = 2.87$, $p = .091$, $\eta_p^2 = .01$, and a non-significant target behavior × target gender interaction effect, $F(3, 354) = 0.97$, $p = .407$, $\eta_p^2 = .01$. Because the effects of target gender were non-significant, I collapsed across this factor for the following analyses.

Participants in the uncertain condition ($M = 3.00$, $SD = 2.96$) reported being less likely to try starting a conversation compared to those in the interested condition ($M = 4.05$, $SD = 3.10$), $t(358) = 2.45$, $p = .015$, 95% $CI_{difference} = [0.21, 1.89]$, $d = 0.37$, but more likely than those in the disinterested condition ($M = 1.48$, $SD = 2.70$), $t(358) = -3.48$, $p < .001$, 95% $CI_{difference} = [-2.38, -0.66]$, $d = -0.53$. Unexpectedly, participants' likelihood of engaging in the uncertain condition was directionally closer to participants' likelihood of engaging in the interested condition ($d = 0.37$) than the disinterested condition ($d = 0.53$; see Figure 4). Participants' reported likelihood of engaging did not differ significantly between the uncertain condition and the neutral condition ($M = 2.66$, $SD = 2.66$), $t(358) = -0.77$, $p = .439$, 95% $CI_{difference} = [-1.19, 0.52]$, $d = -0.12$.

I also tested whether participants reported being especially likely to engage when they both expected the other person to respond to them *and* expected the conversation to feel pleasant. In regression analyses, I observed a main effect of expectancy, $b = -0.27$, $SE = 0.11$, $t(358) = -2.53$, $p = .012$, 95% CI = [-0.47, -0.06], indicating that participants reported being *le*ss likely to

engage when they perceived the person to be likely to respond, and a non-significant main effect of value, $b = 0.13$, $SE = 0.12$, $t(342) = 1.15$, $p = .249$, 95% CI = [-0.09, 0.36]. I also observed a significant expectancy × value interaction effect, $b = 0.05$, $SE = 0.02$, $t(342) = 2.85$, $p = .005$, 95% CI = [0.02, 0.09], indicating that participants reported being especially likely to engage when they both perceived the person to be likely to respond and expected the conversation to be pleasant.

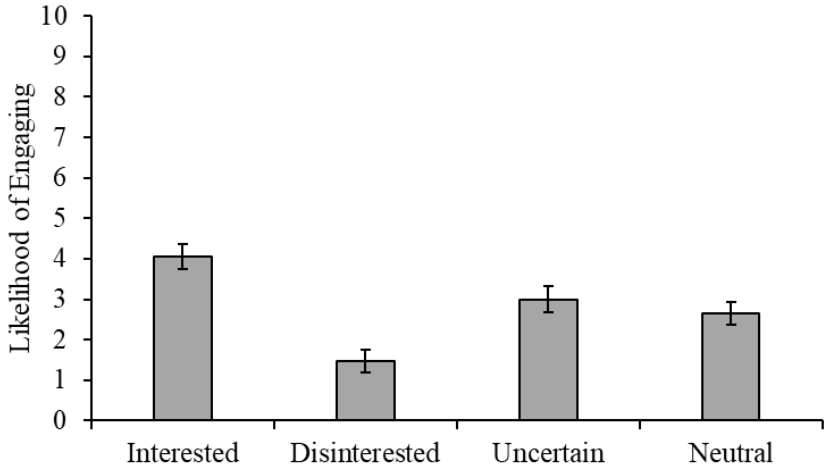

Figure 4. Mean likelihood of engaging across target behavior (disinterested vs. interested vs. neutral vs. uncertain). Error bars ±1 *SE* (Experiment 4).

Discussion

The results of Experiment 4 differ meaningfully from those of Experiments 3a-c: Participants in an uncertain condition, who imagined that they did not see the person's behavior at all, reported being as likely to engage as those in a neutral condition who read that the person maintained a neutral expression on their face. I replicated this pattern of results in a follow-up experiment using the same manipulations as in Experiment 3, $t(179) = -0.51$, $p = .612$, 95% $CI_{difference} = [-1.02, 0.60]$, $d = -0.08$.

Experiment 5: Manipulating Uncertainty Through Variance in Behavior

One interpretation of the findings in Experiment 4 is that participants felt relatively uncertain about the other person's interest in *both* the uncertain and neutral conditions—thus masking the effect of uncertainty—because participants in both conditions possessed relatively little information about the person's behavior. In Experiment 5, I attempted to strengthen the uncertainty manipulation by manipulating the amount of variance that one observed in others' behavior.

In Experiment 5, participants in all conditions read a hypothetical scenario in which a group of passengers boards a train. Participants in the interested, disinterested, and neutral conditions read that these people each displayed relatively similar behavior—that is, each of these people seemed interested in talking, disinterested in talking, or maintained a neutral expression on their face, respectively. In contrast, participants in the uncertain condition read that some people seemed interested in talking and others seemed disinterested in talking. Participants in all conditions then imagined that they looked out the window and did not see which person sat down next to them. They then reported how likely they would be to try starting a conversation with the other person.

Method

Participants. I recruited 216 participants from Amazon Mechanical Turk (N = 180 individuals after exclusions; M_{age} = 35.36; SD_{age} = 11.55; 46.67% female; 75.00% Caucasian) to complete the study in exchange for $0.30. I excluded 26 participants from analyses because they failed an attention check.

Procedure. Participants first thought about times when they had taken the train by themselves and reported how likely they are to try starting a conversation with a stranger sitting

nearby (0 = *not at all likely*; 10 = *extremely likely*). They then read a hypothetical scenario in which they are sitting on the train during their commute to work when several people walk through the door of the train car. In the *interested* condition, these people make eye contact with the passengers and give them a friendly smile as they walk down the aisle. In the *disinterested* condition, these people glare at the passengers and then avert their eyes without smiling as they walk down the aisle. In the *uncertain* condition, several of the people make eye contact with the passengers and give them a friendly smile whereas several others glare at the passengers and then avert their eyes as they walk down the aisle. In the *neutral* condition, the people maintain neutral expressions on their faces and make eye contact with a few of the passengers only briefly as they walk down the aisle.

In all conditions, participants then imagined that they glanced out the window and that one of these people took the last seat on the train right next to them. Participants were explicitly told that they did not know which person sat down next to them. Participants then responded to the dependent measures: they reported how interested they thought the person sitting next to them was in chatting (0 = *not at all interested*; 10 = *extremely interested*), how certain they felt that they had accurately assessed the person's interest in speaking (0 = *not at all*; 10 = *completely*), how likely they would be to try starting a conversation with the other person (0 = *not at all likely*; 10 = *extremely likely*), and how pleasant they thought a back-and-forth conversation with this person would be (0 = *not at all pleasant*; 10 = *extremely pleasant*).

Participants then completed an attention check by indicating which manipulation they had read (*they had neutral expressions on their faces* vs. *they gave the passengers a friendly smile* vs. *they glared at the passengers and then averted their eyes* vs. *some of them gave the passengers a friendly smile whereas others glared at the passengers and then averted their eyes*).

Participants then reported whether they had ever ridden on a train before (*yes* vs. *no*) and how often they ride the train (*never* vs. *about once every few years* vs. *about once every few months* vs. *about once every few weeks* vs. *about once every few days* vs. *at least once per day*).

Finally, participants reported demographic information and received payment.

Results

First I tested whether the manipulation influenced how certain participants felt about their assessment of the other person's interest in talking to them. I conducted a one-way ANOVA with target behavior (interested, disinterested, uncertain, neutral) as the independent variable and certainty as the dependent variable. Reported certainty varied significantly by condition, $F(3, 176) = 3.71$, $p = .013$, $\eta_p^2 = .06$. However, planned contrasts revealed that certainty did not vary in the way I intended. Participants in the uncertain condition ($M = 6.42$, $SD = 2.72$) felt significantly less certain of their assessment of the other person's interest in talking to them compared to participants in the disinterested condition ($M = 7.88$, $SD = 1.77$), $t(176) = -2.65$, $p = .009$, 95% $CI_{difference} = [-2.54, -0.37]$, $d = -0.57$, but felt no less certain compared to participants in the neutral condition ($M = 7.13$, $SD = 2.87$), $t(176) = -1.33$, $p = .184$, 95% $CI_{difference} = [-1.76, 0.34]$, $d = -0.28$, or those in the interested condition ($M = 6.26$, $SD = 2.54$), $t(176) = 0.31$, $p = .755$, 95% $CI_{difference} = [-0.86, 1.19]$, $d = 0.06$. The uncertainty manipulation was therefore weaker than expected.

To test the primary hypotheses, I then conducted a one-way ANOVA with target behavior (interested, disinterested, uncertain, neutral) as the independent variable and the participant's likelihood of trying to start a conversation as the dependent variable. I observed a non-significant main effect of target behavior, $F(3, 176) = 1.68$, $p = .172$, $\eta_p^2 = .03$. Nevertheless, I proceeded to conduct planned contrasts. Participants' likelihood of trying to start a conversation

did not differ significantly between the uncertain condition (M = 2.49, SD = 2.83) and the interested condition (M = 2.90, SD = 2.53), $t(176) = -0.74$, $p = .458$, 95% $CI_{difference}$ = [-1.50, 0.68], $d = -0.15$, nor between the uncertain condition and the disinterested condition (M = 1.65, SD = 2.20), $t(176) = 1.43$, $p = .153$, 95% $CI_{difference}$ = [-0.32, 1.99], $d = 0.31$, or the neutral condition (M = 2.20, SD = 3.09), $t(176) = 0.51$, $p = .611$, 95% $CI_{difference}$ = [-0.83, 1.41], $d = 0.11$ (see Figure 5).

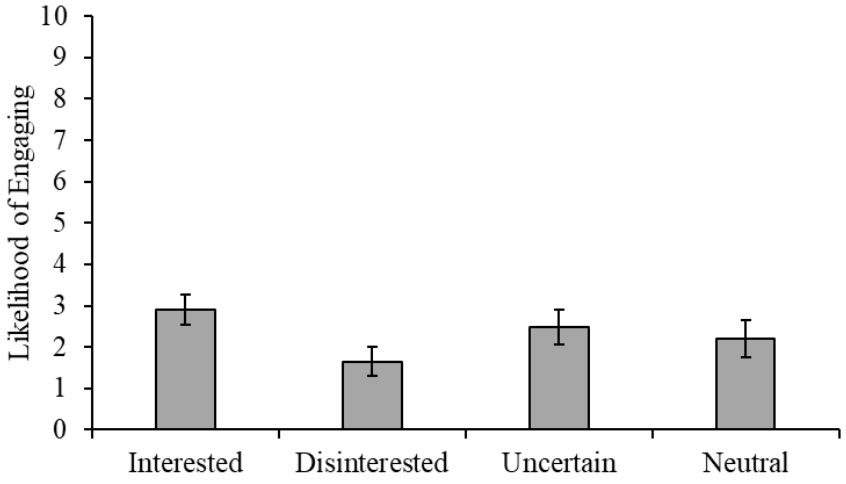

Figure 5. Mean likelihood of engaging across target behavior (disinterested vs. interested vs. neutral vs. uncertain). Error bars ±1 *SE* (Experiment 5).

Moreover, feeling less certain of the other person's interest was not significantly associated with participants' reported likelihood of engaging with the person in any condition. I performed regression analyses with likelihood of engaging as the dependent measure and with perceived interest, expected pleasantness, certainty, and their two-way and three-way interaction effects as independent variables, separately for each of the four conditions. The main effects and interaction effects of certainty were non-significant in all analyses, bs $\leq .02$, ts(37) ≤ 0.64, ps $\geq .527$.

I also tested whether participants reported being especially likely to engage when they both expected the other person to respond to them *and* expected the conversation to feel pleasant. In regression analyses, I observed a non-significant main effect of expectancy, b = -0.27, SE = 0.17, $t(176)$ = -1.60, p = .110, 95% CI = [-0.60, 0.06], and a non-significant main effect of value, b = 0.10, SE = 0.11, $t(176)$ = 0.99, p = .322, 95% CI = [-0.10, 0.31]. However, I again observed a significant expectancy × value interaction effect, b = 0.12, SE = 0.03, $t(176)$ = 4.66, p < .001, 95% CI = [0.07, 0.17], indicating that participants reported being especially likely to engage when they both perceived the person to be interested in talking and expected the conversation to be pleasant.

Discussion

The experimental manipulation was not effective in Experiment 5: Participants felt no less certain of the other person's interest in engaging with them in the "uncertain" condition compared to the "neutral" condition. Differences across conditions in participants' reported likelihood of engaging are thus difficult to interpret. However, participants in each condition who were relatively uncertain of the other person's interest reported being as likely to engage with the person as those who were relatively certain of the person's interest. These results therefore provide some evidence that uncertainty about others does not create a powerful barrier to socially engaging.

Importantly, Experiments 3a-c did not include a manipulation check and so it is unclear whether the findings of the earlier experiments owed to differences in certainty across conditions or an (unintended) inference that the other person seemed relatively untrustworthy or suspicious in the "uncertain" condition. Experiments 3a-5 together provide only mixed evidence that

uncertainty about others' interest helps to explain why people choose not to engage with others in positive ways that might enhance their well-being.

General Discussion

Existing research suggests that people are less social than would be ideal for their well-being. Experiments 1a-5 suggest at least one reason why: People systematically underestimate distant others' sociality (Experiment 1), and these miscalibrated expectations create a psychological barrier to socially engaging (Experiments 2a-5). Consistent with the expectancy-value theory, participants reported being more likely to engage when they perceived an outcome to be highly likely *and* attached high value to that outcome. However, I found only mixed evidence that uncertainty about others' interest causes people to remain disengaged (Experiments 3a-5) independent of perceiving others to be uninterested in engaging.

These data suggest several future directions. First, Experiments 2a-b independently manipulate expectancies and values, but they do so for *one* outcome. Several outcomes may be coactivated during the engagement decision (Higgins, 1996): For example, you might believe that chatting with an old friend from high school could lead to engaging conversation (positive value) or an awkward silence (negative value). Future research should therefore test whether people place greater weight on outcomes that they perceive to be likely than those they perceive to be unlikely, as the expectancy-value theory predicts, as well as whether negative outcomes are relatively more influential than positive ones in determining a person's interest in engaging (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001). These experiments could also examine whether a person's interest in engaging is guided more strongly by their expectancies of others' willingness to engage with them (Epley & Schroeder, 2014;

Leary, 2015) or by their perceptions of their own ability to tactfully *dis*engage at the end of the interaction.

Second, future research should examine why participants were not reliably less interested in engaging when they were uncertain of others' interest in talking to them compared to when others maintained a neutral expression on their face (Experiments 3a-5). People hesitate to pursue opportunities that feel relatively uncertain (Ellsberg, 1961), but this aversion is stronger when people directly compare certain opportunities with uncertain ones (Fox & Tversky, 1995). This predicts that a within-subjects design—where participants consider *both* a person who displays a neutral expression and a person whose interest is uncertain—might reveal a preference for greater certainty like the findings demonstrated in prior literature.

Third, future research should examine whether people hold more accurately calibrated expectations about others' sociality in cultures that encourage more interaction between distant others. People who engage with strangers more often learn that others are relatively social and therefore expect their interactions to unfold more positively (Epley & Schroeder, 2014; Fazio, Eiser, & Shook, 2004; Zelenski et al., 2013). Cultural contexts that encourage these interactions may foster stronger connections and greater well-being as a result (Sandstrom & Dunn, 2014).

Finally, the expectancy-value theory outlines two channels through which people may misjudge the consequences of socially engaging and therefore mismanage their social engagement decisions: People can misunderstand the probability that engaging with another person would lead to a specific outcome (expectancy) or the value they would attach to this outcome (value). A large body of work documents psychological processes that lead people to misunderstand the expectancies of others' responses during social interaction (e.g., Bohns, 2016; Epley & Schroeder, 2014; Kardas, Kumar, & Epley, 2020a, 2020b; Kumar & Epley, 2020;

Mallett, Gilbert, & Wilson, 2008; Shelton & Richeson, 2005; Zhao & Epley, 2020). Future research should examine whether people also misunderstand the value they would assign to these outcomes. For example, people might expect that being included or excluded by others would lead to initially less intense emotional responses than these events actually create (Nordgren, Banas, & MacDonald, 2011; Van Boven, Loewenstein, Dunning, & Nordgren, 2013), but they might also expect those responses to last for longer than they do (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000).

Chapter 3: *How* to Engage

Abstract

Interactive communication media that enable moment-to-moment responding, such as face-to-face conversations and phone calls, should enable people to form stronger connections compared to non-interactive communication media that prevent moment-to-moment responding, such as voice messages and email. However, people may be unlikely to focus on the communication medium through which they engage when assessing the consequences of reaching out to another person. Four experiments suggest that interactive communication media allow distant strangers to establish more common ground and to form stronger connections compared to non-interactive media (Experiments 6-8b), especially when discussing an area of disagreement (Experiment 7). However, participants did not anticipate differences in their common ground experiences or the strength of their social bonds across these communication media (Experiments 6, 7, 8b). People may therefore undervalue interactive communication media while choosing how to engage with others.

I next conducted four experiments to examine how wisely people choose *how* to engage with one another—that is, the communication medium through which they engage. As outlined earlier, people form expectancies of others' responses partly based on their beliefs about others' sociality. The communication medium is a feature of the social context that may be less likely to capture one's attention (Kruger, Epley, Parker, & Ng, 2005; Kumar & Epley, 2020a). If communication media vary systematically in the extent to which they enable people to behave socially toward one another, people may undervalue communication media that enable greater sociality.

One important feature of the communication medium is the extent to which the medium allows individuals to respond to one another on a moment-to-moment basis. Interactive media, such as face-to-face conversations and phone calls, are more *social* than non-interactive media such as voice messages and emails. Interactive media entail dialogue: Individuals can respond to one another, ask follow-up questions (Yeomans, Brooks, Huang, Minson, & Gino, 2019), tailor their statements to another person's knowledge or beliefs (Echterhoff, Higgins, & Levine, 2009), express empathic concern for each other's experience (Batson, Duncan, Ackerman, Buckley, & Birch, 1981), and display friendly nonverbal behaviors (Chartrand & Baaren, 2009). Each of these social processes should allow individuals to establish greater common ground. In contrast, non-interactive media entail monologue: They remove these fundamentally social features of back-and-forth conversation and should consequently hinder people's ability to connect.

I hypothesized that people assigned to engage in *dialogue* with a stranger would expect to establish similar common ground as those assigned to engage in *monologue*, but that those who engaged in back-and-forth dialogue would later experience significantly greater common ground.

As a result, I hypothesized that participants in the dialogue conditions would underestimate their experiences of common ground more than those in the monologue conditions.

Experiment 6: Monologue vs. Dialogue

In Experiment 6, pairs of strangers received a series of conversation questions and were assigned to one of two conditions. Those in the *dialogue* condition were told that they would discuss the questions with another person in a back-and-forth conversation. Those in the *monologue* condition were told that they and another person would independently video record their responses to the questions and then watch each other's recordings. Participants predicted how much common ground they would establish with the other person, engaged in dialogue or monologue, and reported their experiences of common ground. I hypothesized that participants' expectations would not differ between conditions but that those in the dialogue condition would experience significantly more common ground than they expected.

Method

Participants. I recruited $N = 100$ pairs of participants from the community subject pool ($M_{age} = 36.35$; $SD_{age} = 14.02$; 43.00% female; 17.00% Caucasian) to complete the study in exchange for $5.00. An additional 3 pairs were excluded: two because they did not discuss all five questions and one because a participant engaged in the discussion before completing all prediction measures.

Procedure. Research assistants brought each participant into a separate study room to keep them from seeing each other at the start of the procedure. Pairs were then randomly assigned to either the monologue or dialogue condition. Those in the monologue condition were told:

> Later in this study, you will share some of your preferences and beliefs with another person that you have not met yet and he or she will share some of his or her preferences and beliefs with you. Specifically, you will respond to five questions out loud while I video record your responses. Meanwhile, another person will also video record his or her responses to these questions in the other room. After you are both done speaking, the other person will watch the video recording of your responses and you will watch his or her video recording.

Participants in the dialogue condition were told:

> Later in this study, you will share some of your preferences and beliefs with another person that you have not met yet and he or she will share some of his or her preferences and beliefs with you. Specifically, you will answer five questions with this other person and discuss those answers however you would like to. This will be a natural conversation in which you may both discuss your own answers and respond to the other person's answers just as you normally would while getting to know someone.

Then participants read the five discussion questions:

> (1) What are some places you would like to visit in the future?
>
> (2) What are some hobbies that you enjoy in your free time?
>
> (3) What music do you like? What genres, bands or stations do you listen to?
>
> (4) What kind of food do you like? Do you have a favorite restaurant you like to go to? What do you like to eat there?

(5) What are some movies or TV shows you have watched and enjoyed?

Participants then predicted how much common ground they would establish during the exchange. Specifically, they predicted how much they would feel they had in common with the person (0 = *nothing at all*; 10 = *quite a bit*), how similar they would believe their interests were to the other person's interests (0 = *not similar at all*; 10 = *extremely similar*), how much they think they would have to talk about were they to spend additional time with the other person (0 = *nothing at all*; 10 = *quite a bit*), and how much they would like the other person (0 = *not at all*; 10 = *quite a bit*).

After reporting predictions, participants responded to the discussion questions. Pairs in the monologue condition video recorded their responses to the five discussion questions from separate rooms. To ensure that participants could watch each other's recordings without also interacting face to face, a research assistant uploaded each recording to the web, downloaded onto the other participant's computer, and instructed the participant to watch and listen to the video. In the dialogue condition, participants spoke with one another from separate rooms using video conferencing technology. They were told that they should both discuss their responses to all five questions and engage in a natural conversation. After engaging in monologue or dialogue, participants reported their experiences on the same measures as they had reported predictions.

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

Results

The four dependent measures were highly correlated in both predictions ($\alpha = .83$) and experiences ($\alpha = .91$) and so I collapsed them to form a common ground scale.

A 2 (medium: monologue, dialogue) × 2 (evaluations: predictions, experiences) ANOVA with the common ground scale as the dependent variable revealed a significant main effect of medium, $F(1, 98) = 9.97$, $p = .002$, $\eta_p^2 = .09$, such that participants reported greater common ground in the dialogue condition, and a significant main effect of evaluations, $F(1, 98) = 68.41$, $p < .001$, $\eta_p^2 = .41$, such that participants underestimated common ground. Consistent with my predictions, the medium × evaluations interaction effect was significant, $F(1, 98) = 16.98$, $p < .001$, $\eta_p^2 = .15$, indicating that participants underestimated their experiences of common ground more in the dialogue condition than in the monologue condition (see Figure 6).

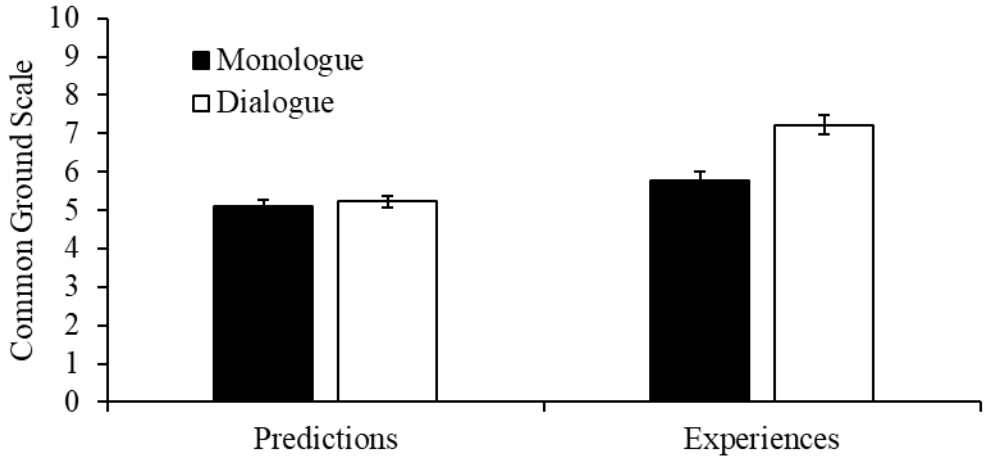

Figure 6. Mean common ground scale ratings across medium (monologue vs. dialogue) and evaluations (predictions vs. experiences). Error bars ±1 *SE* (Experiment 6).

To decompose the interaction effect, I performed planned contrasts. Participants' common ground predictions did not differ significantly between the monologue ($M = 5.10$, $SD = 1.22$) and dialogue ($M = 5.22$, $SD = 1.01$) conditions, $t(98) = 0.50$, $p = .615$, 95% $CI_{difference} = [-0.33, 0.56]$, $d = 0.10$. However, participants experienced significantly greater common ground in the dialogue condition ($M = 7.22$, $SD = 1.85$) than the monologue condition ($M = 5.77$, $SD =$

1.67), $t(98) = 4.11$, $p < .001$, 95% $CI_{difference} = [0.75, 2.15]$, $d = 0.82$. Participants underestimated how much common ground they would establish in both the monologue condition, *paired* $t(49) = -2.99$, $p = .004$, 95% $CI_{difference} = [-1.12, -0.22]$, $d = -0.42$, and the dialogue condition, *paired* $t(49) = -8.62$, $p < .001$, 95% $CI_{difference} = [-2.47, -1.54]$, $d = -1.22$, although the significant medium × evaluations interaction effect indicates that participants underestimated their common ground experiences significantly more in the dialogue condition.

Discussion

The results from Experiment 6 supported my predictions: Participants expected to establish similar common ground in the dialogue and monologue conditions, but those in the dialogue condition underestimated their common ground experiences significantly more than those in the monologue condition. Interactive communication media are more social than non-interactive media, but people may overlook properties of the communication medium that enable distant strangers to form closer connections through these media.

Experiment 7: Agreement vs. Disagreement

I next sought to replicate and extend the findings of the prior experiment. In Experiment 7, pairs of strangers discussed divisive social and political topics. I manipulated whether participants discussed topics about which they agreed or disagreed as well as whether they discussed these topics through monologue or dialogue. This experiment thus tests whether interactive communication media are especially important for finding common ground in the midst of disagreement, and if so, whether people appreciate the importance of the dialogue for reaching common ground during disagreement.

As discussed earlier, a person's expectancies of others' responses are determined partly by their assessment of how social the other person will be while interacting. People may expect

distant others to be relatively indifferent to oneself, and so strangers may be expected to be relatively hostile to one's opposing viewpoints. I therefore hypothesized that people would expect to establish substantially less common ground with the other person in the disagreement conditions than the agreement conditions. Like the prior experiment, I also hypothesized that these expectations would not differ between the monologue and dialogue conditions.

However, people underestimate strangers' sociality: Distant others tend to be more caring and interested during conversation than people expect (Epley & Schroeder, 2014; Shelton & Richeson, 2005). Thus, even in the midst of disagreement, others may tailor their statements to one's viewpoints (Echterhoff, Higgins, & Levine, 2009), respond to one's statements, ask follow-up questions (Yeomans, Brooks, Huang, Minson, & Gino, 2019), or display friendly nonverbal behaviors (Chartrand & Baaren, 2009), each of which should promote greater experiences of common ground. I therefore predicted that strangers who engaged in dialogue would establish considerable common ground in both the agreement and disagreement conditions. As a result, I predicted that participants would underestimate how much common ground they would establish in the dialogue conditions more than the monologue conditions, and further, that this pattern of results would be especially pronounced in the disagreement conditions relative to the agreement conditions.

Participants. I targeted 120 pairs of participants but ended the study early due to the COVID-19 pandemic. In total, I recruited 113 pairs of participants after exclusions from the campus and community subject pools (N = 226 individuals; M_{age} = 25.58; SD_{age} = 10.31; 43.81% female; 32.74% Caucasian) to complete the study in exchange for $6. I also excluded an additional 22 pairs from analyses: In 13 pairs, participants "matched" on only one topic based on their attitude ratings; in 3 pairs, one participant discussed only one of the three issues they were

assigned; in 2 pairs, the experimenter instructed the pair to discuss an issue for which one participant reported not having any attitude; in 2 pairs, participants already knew each other; in 1 pair, a participant did not watch the other person's video; and in 1 pair, the experimenter did not verbally state the manipulation.

Procedure. Research assistants brought each participant into a separate study rooms to keep them from seeing each other at the start of the procedure. Participants first reported their attitudes on a series of 28 social and political issues, such as "passing stricter gun control legislation" (see Appendix A for the full list of issues), from -3 (s*trongly oppose*) to 0 (*neither oppose nor* s*upport*) to 3 (s*trongly* s*upport*). Participants could optionally select, "I don't know," for any issues that they were unfamiliar with. Because several of the issues could potentially evoke negative thoughts and emotions, the survey then displayed the same list of issues and asked participants to indicate any issues that they would not feel comfortable discussing.

After both participants reported their attitudes, pairs were assigned to a 2 (medium: monologue, dialogue) × 2 (attitudes: agreement, disagreement) × 2 (evaluations: predictions, experiences) design with repeated measures on the third factor. The experimenter selected up to 3 issues for which the pair exhibited agreement or disagreement. In the agreement conditions, the experimenter prioritized issues for which the participants reported identical attitudes (e.g., +2 and +2) relative to non-identical attitudes (e.g., +3 and +1), and prioritized issues for which both participants reported strong attitudes (e.g., +3 and +3) relative to weak attitudes (e.g., +1 and +1). In the disagreement conditions, the experimenter prioritized issues for which disagreement was extreme (e.g., +3 and -3) rather than moderate (e.g., +1 and -1). When pairs "matched" on more than 3 issues, the experimenter selected 3 issues using the criteria above and broke ties at random. Experimenters did not select issues for which either participant selected the scale

midpoint ("neither oppose nor support") or reported not having an attitude ("I don't know"), and did not select issues that either participant felt uncomfortable discussing.

The experimenter then informed each participant how they would engage with the other person. In the dialogue conditions, the experimenter stated that the participants would have a "natural conversation in which you may both discuss your own viewpoints about these social and political issues and respond to your partner's views just as you normally would while discussing social and political topics." In the monologue conditions, the experimenter stated that "for each issue you will respond to the discussion questions out loud while I video record your responses. Meanwhile, your partner will also video record his or her responses to these questions for each issue in the other room. After you are both done speaking, your partner will watch the video recording of your responses and you will watch his or her video recording."

Participants then read the list of issues they would discuss with the other person and viewed both their own and the other person's reported attitudes for each of those issues. They also viewed the two conversation questions that they would discuss for each issue:

> (1) What is your position on this issue? Why do you think you feel this way?
>
> (2) How important is this issue to you? Is there any aspect of the issue that is especially important?

Participants then completed a series of dependent measures. First, to test whether the agreement versus disagreement manipulation was effective, participants reported how similar they perceived their social and political beliefs to be to their partner's beliefs (0 = *not similar at all*; 10 = *extremely similar*) and how much their social and political beliefs had in common with their partner's beliefs (0 = *nothing at all*; 10 = *quite a bit*).

Participants then reported their expectations about how the upcoming exchange would unfold. They first reported how interested and engaged they expected their partner to be (0 = *not at all interested and engaged*; 10 = *extremely interested and engaged*) and how friendly they expected their partner to be (0 = *not at all friendly*; 10 = *extremely friendly*). Next they reported how connected they expected to feel at the end of the interaction (0 = *not connected at all*; 10 = *extremely connected*) and how much they expected to like their partner (0 = *not at all*; 10 = *quite a bit*). Finally, participants predicted how similar they would feel their social and political beliefs were to their partner's beliefs at the end of the interaction (0 = *not similar at all*; 10 = *extremely similar*) and how much they would perceive their beliefs to have in common (0 = *nothing at all*; 10 = *quite a bit*).

` Participants then engaged in monologue or dialogue. After the end of the exchange, participants reported their experiences on the same measures as they had reported their predictions. They also reported their current attitudes toward the topics they discussed (-3 = *strongly oppose*; 0 = *neither oppose nor support*; 3 = *strongly support*). Finally, participants reported demographic information and were thanked and debriefed.

Results

The interest and friendliness measures ($\alpha_{predicted}$ = .77, $\alpha_{experienced}$ = .83) were highly correlated, as were the connectedness and liking measures ($\alpha_{predicted}$ = .88, $\alpha_{experienced}$ = .93) and the similarity and commonality measures ($\alpha_{baseline}$ = .97, $\alpha_{predicted}$ = .99, $\alpha_{experienced}$ = .98), and so I collapsed these items to form friendliness, connectedness, and common ground scales, respectively.

The manipulation was effective: After viewing their partner's attitudes but before speaking, participants in the agreement condition (M = 7.67, SD = 1.36) perceived greater

agreement than those in the disagreement condition (M = 3.07, SD = 1.98), $t(111) = 14.46$, $p < .001$, 95% $CI_{difference}$ = [3.96, 5.22], d = 2.72.

I then conducted 2 (medium: monologue, dialogue) × 2 (attitudes: agreement, disagreement) × 2 (evaluations: predictions, experiences) ANOVAs with repeated measures on the third factor, separately for the friendliness scale, the connectedness scale, and the common ground scale. Participants underestimated how friendly they would perceive their partner to be, and consistent with my predictions, this pattern was especially pronounced in the dialogue (vs. monologue) conditions and in the disagreement (vs. agreement) conditions. I observed a main effect of evaluations, $F(1, 109) = 122.96$, $p < .001$, $\eta_p^2 = .53$, indicating that participants underestimated how friendly they would perceive the other person to be. This main effect was qualified by two significant interaction effects (see Figure 7): First, I observed a significant medium × evaluations interaction effect, $F(1, 109) = 6.85$, $p = .010$, $\eta_p^2 = .06$, indicating that participants in the dialogue (vs. monologue) conditions were especially likely to underestimate how friendly they would perceive the other person to be. Extending this finding to the context of disagreement, I also observed a significant attitudes × evaluations interaction effect, $F(1, 109) = 8.58$, $p = .004$, $\eta_p^2 = .07$, indicating that participants in the disagreement conditions were especially likely to underestimate how friendly they would perceive their partner to be relative to those in the agreement conditions. The three-way medium × attitudes × evaluations interaction effect was non-significant, $F(1, 109) = 0.66$, $p = .417$, $\eta_p^2 = .01$.

Participants also underestimated how connected they would feel to the other person, and consistent with my predictions, this finding was especially pronounced in the dialogue (vs. monologue) conditions. I observed a main effect of evaluations, $F(1, 109) = 74.98$, $p < .001$, $\eta_p^2 = .41$, indicating that participants underestimated how connected they would feel to the other

person. This main effect was qualified by a significant medium × evaluations interaction effect, $F(1, 109) = 5.57$, $p = .020$, $\eta_p^2 = .05$, indicating that participants in the dialogue (vs. monologue) conditions were especially likely to underestimate how connected they would feel to the other person (see Figure 7). The medium × evaluations interaction effect was non-significant, $F(1, 109) = 1.59$, $p = .210$, $\eta_p^2 = .01$. I observed a marginally significant medium × attitudes × evaluations interaction effect, $F(1, 109) = 3.12$, $p = .080$, $\eta_p^2 = .03$, indicating that the tendency for participants to underestimate their connectedness more for dialogue than for monologue was directionally more pronounced in the disagreement (vs. agreement) conditions.

Participants also underestimated how much common ground they would establish with the other person, and consistent with my predictions, this finding was especially pronounced in the dialogue (vs. monologue) conditions and in the disagreement (vs. agreement) conditions. I observed a main effect of evaluations, $F(1, 109) = 43.95$, $p < .001$, $\eta_p^2 = .29$, indicating that participants underestimated how much agreement they would perceive between themselves and their partner. This main effect was qualified by three significant interaction effects (see Figure 7): First, I observed a significant medium × evaluations interaction effect, $F(1, 109) = 6.60$, $p = .012$, $\eta_p^2 = .06$, indicating that participants in the dialogue (vs. monologue) conditions were especially likely to underestimate how friendly they would perceive the other person to be. I also observed a significant attitudes × evaluations interaction effect, $F(1, 109) = 4.74$, $p = .032$, $\eta_p^2 = .04$, indicating that participants in the disagreement conditions were especially likely to underestimate how friendly they would perceive their partner to be relative to those in the agreement conditions. Finally, I observed a significant medium × attitudes × evaluations interaction effect, $F(1, 109) = 4.25$, $p = .042$, $\eta_p^2 = .04$, indicating that the tendency for

participants to underestimate agreement more for dialogue than for monologue was especially pronounced in the disagreement (vs. agreement) conditions.

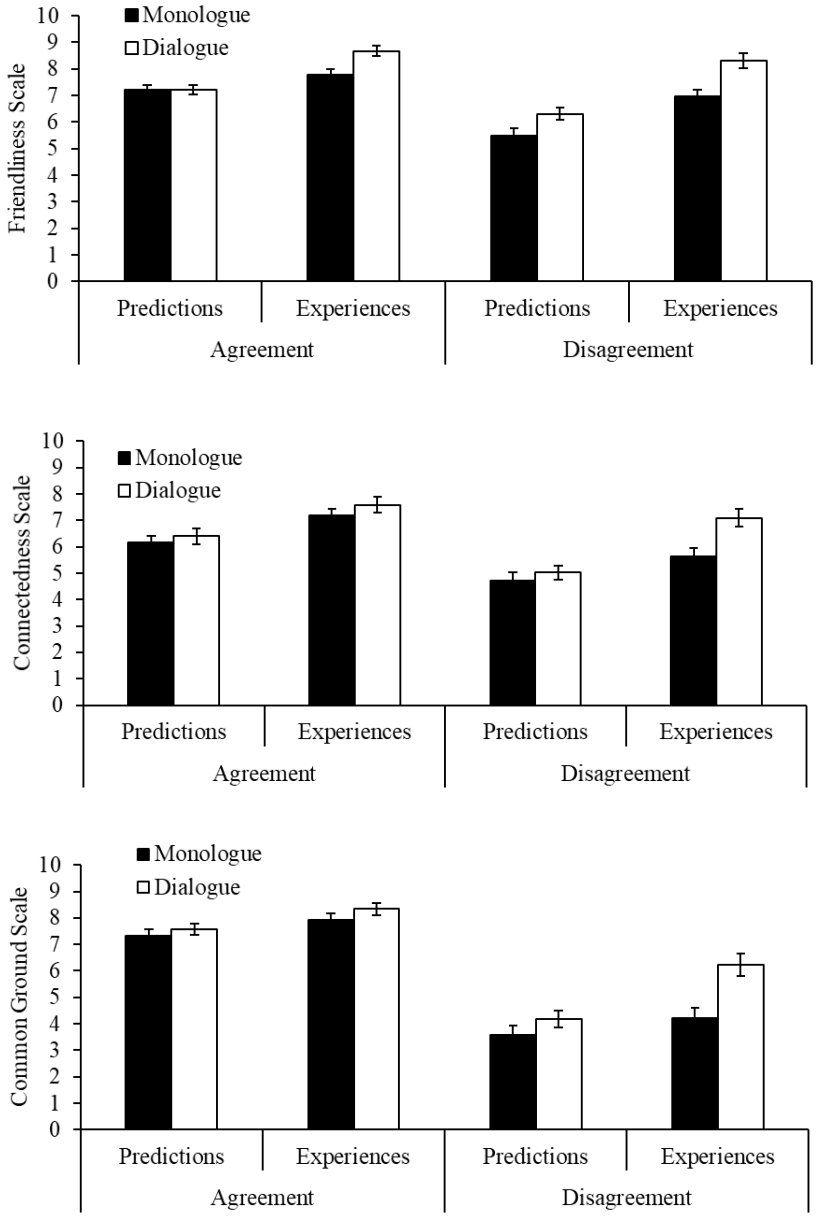

Figure 7. Mean friendliness scale, connectedness scale, and common ground scale ratings across medium (monologue vs. dialogue), attitudes (agreement vs. disagreement), and evaluations (predictions vs. experiences). Error bars ±1 *SE* (Experiment 7).

In the disagreement conditions, participants' attitudes were more similar after the interaction than beforehand, but the magnitude of this convergence did not differ significantly between the monologue and dialogue conditions. This finding was confirmed in a 2 (time: pre, post) × 2 (medium: monologue, dialogue) ANOVA with repeated measures on the first factor and the absolute differences between paired participants' attitude ratings as the dependent measure. I observed only a significant main effect of time, $F(1, 52) = 98.43$, $p < .001$, $\eta_p^2 = .65$, indicating that differences between paired participants' attitudes were smaller in the post-interaction ratings than the pre-interaction ratings. The main effect of medium, $F(1, 52) = 1.07$, $p = .306$, $\eta_p^2 = .02$, and the medium × time interaction effect, $F(1, 52) = 0.72$, $p = .401$, $\eta_p^2 = .01$, were each non-significant.

Discussion

Replicating the findings from Experiment 6, participants expected to establish similar common ground in the dialogue and monologue conditions, but those in the dialogue conditions later experienced significantly more common ground than those in the monologue conditions. Moreover, these patterns of results were significantly more pronounced in the disagreement conditions relative to the agreement conditions. People may undervalue interactive communication media that entail dialogue and thus allow individuals to find common ground.

Experiments 8a-b: Answering vs. Responding

People may underestimate the benefits of dialogue for forming closer connections because they overlook social processes that allow strangers to establish common ground during conversation. Next, I tested one such process: People may establish greater common ground when the communication medium allows individuals to respond to each other's statements, but people may overlook this feature of dialogue.

In Experiments 8a-b, online participants read transcripts of lab participants' spoken responses from Experiment 6. Those in the *answer* conditions read the transcripts and then provided their own answers to the same conversation questions. Those in the *respond* conditions read the transcripts, responded to those transcripts, and then provided their own answers to the same conversation questions. I hypothesized that participants would report greater experiences of common ground in the respond conditions than the answer conditions (Experiments 8a-b), and that this pattern would not differ between participants who read dialogue versus monologue transcripts from Experiment 6. I also predicted that participants in the answer and respond conditions would expect to establish similar amounts of common ground (Experiment 8b), suggesting that people may not appreciate—or may not naturally consider—the importance of moment-to-moment responding for allowing individuals to establish common ground.

Method (Experiment 8a)

Stimuli. Research assistants transcribed the exchanges of the first 10 pairs in both the monologue and dialogue conditions from Experiment 6, thus creating 40 sets of transcripts. In the dialogue condition, the research assistants transcribed each participant's responses separately for each of the conversation questions but removed interjections (e.g., "Yeah") and off-topic exchanges.

Participants. I recruited 169 participants from Amazon Mechanical Turk (N = 116 individuals after exclusions; M_{age} = 35.90; SD_{age} = 11.17; 35.65% female; 73.04% Caucasian) to complete the study in exchange for $1.25. I excluded 53 participants from analyses for failing one or more attention checks.

Procedure. Participants read that the researchers had brought people into the lab to share information about themselves. They read that during the current study, they would read some of these people's responses as well as provide their own responses.

Participants then read the list of five conversation questions from Experiment 6. They were then randomly assigned to either the "answer" or "respond" condition. In the answer condition, participants read that for each of the five questions, they would read the other person's response and then provide their own written response to the same question. In the respond condition, participants read that for each of the five questions, they would read the other person's response and then both (i) respond to the other person's answer as if they were having a back-and-forth conversation, and (ii) provide their own written response to the same question.

Participants were than assigned to read the transcripts corresponding to one participant from Experiment 1. Participants read the first conversation question and the transcript of the other person's response, and then they either answered the same conversation question or both responded to the other person's answer and provided their own answer. They then completed this same process for the second through fifth conversation questions.

Participants then completed a four-item common ground scale by reporting how much they felt they had in common with the other person (0 = *nothing at all*; 10 = *quite a bit*), how similar they believe their interests are to the other person's interests (0 = *not similar at all*; 10 = *extremely similar*), how much they would have to talk about with the other person if they spent some time together (0 = *nothing at all*; 10 = *quite a bit*), and how much they liked the other person (0 = *not at all*; 10 = *quite a bit*).

Participants then completed an attention check by reporting how they had been instructed to respond to the discussion questions (*simply provide my own answer to the discussion question*

vs. *respond to the other person's answer as if I were engaging in back-and-forth conversation, then provide my own answer to the discussion question*). They then completed a free-response attention check by restating the other person's response to the fourth conversation question—that is, by stating what kind of food the other person likes, what the person's favorite restaurant is, and what the person likes to eat there.

Finally, participants reported demographic information and received payment.

Method (Experiment 8b)

Participants. I recruited 161 participants from Amazon Mechanical Turk (N = 142 individuals after exclusions; M_{age} = 35.94; SD_{age} = 12.01; 47.18% female; 71.83% Caucasian) to complete the study in exchange for $1.50. I excluded 19 participants from analyses for failing one or more attention checks.

Procedure. The procedure was identical to Experiment 8a with two exceptions. First, participants reported both their predictions before the conversation and their experiences after the conversation using the common ground measures from the prior experiment. Second, I added a fifth item to the common ground scale in which participants reported how connected they expected to feel, or how connected they felt, to the other person (0 = *not connected at all*; 10 = *extremely connected*).

Results (Experiment 8a)

The dependent measures were highly correlated (α = .92) and so I collapsed them to form a common ground scale. Consistent with my predictions, participants reported greater common ground experiences in the respond condition (M = 5.91, SD = 2.10) than the answer condition (M = 5.05, SD = 2.12), $t(114) = -2.19$, $p = .030$, 95% $CI_{difference}$ = [-1.64, -0.08], $d = -0.41$.

These findings did not differ meaningfully between participants who engaged with monologue versus dialogue transcripts. I performed a 2 (response type: answering, responding) × 2 (transcript type: monologue, dialogue) between-participants ANOVA with the common ground scale as the dependent measure. I observed only a main effect of response type, $F(1, 112) = 4.20$, $p = .043$, $\eta_p^2 = .04$, indicating that participants experienced greater common ground in the respond condition than the answer condition. The main effect of transcript type, $F(1, 112) = 0.26$, $p = .612$, $\eta_p^2 = .002$, and the response type × transcript type interaction effect, $F(1, 112) = 0.18$, $p = .673$, $\eta_p^2 = .002$, were each non-significant.

Results (Experiment 8b)

The dependent measures were again highly correlated in participants' predictions ($\alpha = .92$) and experiences ($\alpha = .95$) and so I collapsed them to form a common ground scale.

Consistent with my predictions, participants' common ground predictions did not vary significantly by response type (responding versus answering), but those in the respond condition experienced greater common ground than those in the answer condition. These findings were confirmed in a 2 (response type: responding, answering) × 2 (evaluations: predictions, experiences) ANOVA with repeated measures on the second factor and the common ground scale as the dependent measure. I observed a significant main effect of response type, $F(1, 140) = 4.80$, $p = .030$, $\eta_p^2 = .03$, such that participants in the respond condition reported greater common ground than those in the answer condition, and a main effect of evaluations, $F(1, 140) = 19.65$, $p < .001$, $\eta_p^2 = .12$, such that participants unexpectedly overestimated common ground. These main effects were qualified by a significant response type × evaluations interaction effect, $F(1, 140) = 6.27$, $p = .013$, $\eta_p^2 = .04$, indicating that participants overestimated common ground to a greater degree in the answer (vs. respond) condition (see Figure 8).

To decompose the interaction effect, I then analyzed the simple effects. Participants' common ground predictions did not differ significantly between the answer (M = 5.65, SD = 1.82) and respond (M = 5.85, SD = 1.55) conditions, $t(140) = -0.70$, $p = .485$, 95% $CI_{difference}$ = [-0.76, 0.36], $d = -0.12$, but those in the respond condition (M = 5.51, SD = 2.19) experienced significantly greater common ground than those in the answer condition (M = 4.42, SD = 2.50), $t(140) = -2.76$, $p = .007$, 95% $CI_{difference}$ = [-1.86, -0.31], $d = -0.46$.

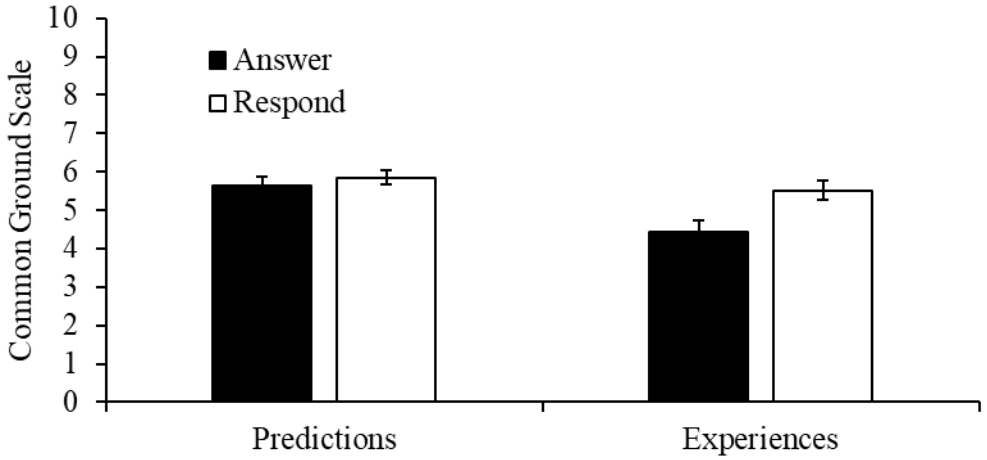

Figure 8. Mean common ground scale ratings across response type (answering vs. responding) and evaluations (predictions vs. experiences). Error bars ±1 *SE* (Experiment 8b).

These findings did not differ meaningfully between participants who engaged with monologue versus dialogue transcripts. I performed a 2 (response type: answering, responding) × 2 (evaluations: predictions, experiences) × 2 (transcript type: monologue, dialogue) between-participants ANOVA with the common ground scale as the dependent measure. I observed a significant main effect of response format, $F(1, 138) = 3.92$, $p = .050$, $\eta_p^2 = .03$, indicating that participants in the respond condition reported greater common ground than those in the answer condition, and a significant main effect of evaluations, $F(1, 138) = 20.17$, $p < .001$, $\eta_p^2 = .13$, indicating that participants overestimated common ground. Replicating the findings described

above, these main effects were qualified by a significant response type × evaluations interaction effect, $F(1, 138) = 6.24$, $p = .014$, $\eta_p^2 = .04$, indicating that participants overestimated common ground to a greater degree in the answer condition than the respond condition. Unexpectedly, I also observed a significant response type × transcript type interaction effect, $F(1, 138) = 4.27$, $p = .041$, $\eta_p^2 = .03$, indicating that the tendency to report greater common ground in the respond condition than the answer condition was more pronounced among participants who engaged with dialogue (vs. monologue) transcripts. The response type × evaluations × transcript type interaction effect was non-significant, $F(1, 138) = 0.10$, $p = .747$, $\eta_p^2 = .001$.

Discussion

The results of Experiments 8a-b were generally consistent with my predictions: Participants experienced significantly more common ground in the respond conditions than the answer conditions (Experiments 8a-b). Moreover, participants did not expect their common ground experiences to differ significantly across conditions (Experiment 8b). People may fail to appreciate, or may not naturally consider, the importance of moment-to-moment responding for allowing individuals to find common ground. This may help to explain why participants were especially likely to underestimate their common ground experiences in the dialogue conditions of Experiments 6-7.

General Discussion

The theory suggests that people predict others' behaviors partly by assessing how social others are likely to be during an interaction. People focus less on the medium of the interaction (Kruger, Epley, Parker, & Ng, 2005; Kumar & Epley, 2020a), and Experiments 6-8b suggest that people consequently expect dialogue with a stranger to be a less positive experience than it is.

The results of these experiments raise several questions for future research. First, future research should test whether undervaluing dialogue leads people to make suboptimal choices between interactive and non-interactive communication media. For example, participants in a "free-choice" condition, who choose whether to engage with a stranger through monologue or dialogue, may choose these media approximately at chance levels. As a result, these participants may feel less connected to the other person at the end of the exchange compared to those in a "dialogue" condition who are instructed to engage in back-and-forth conversation.

Second, future research should examine why participants *under*estimated common ground in Experiments 6 and 7 but *over*estimated common ground in the answer condition of Experiment 8b. These seemingly contradictory findings may have arisen because participants engaged through a spoken communication medium in Experiments 6 and 7 but a written one in Experiment 8. People form significantly stronger connections through spoken (vs. written) communication media (Kumar & Epley, 2020a) but typically do not expect their experiences to vary across these media (Kruger, Epley, Parker, & Ng, 2005). Thus, people may be more likely to underestimate the common ground they would establish through a spoken compared to a written medium. Importantly, I did not observe differences in predicted common ground across conditions in any experiment. This suggests that people are likely to undervalue, and therefore underutilize, interactive media relative to non-interactive media whether they these media are spoken (e.g., phone calls versus voice messages) or written (e.g., chat rooms versus emails).

Finally, future research should test whether differences in common ground experiences between the monologue and dialogue conditions are real or illusory. On the one hand, people may establish greater common ground through conversation by learning from one another (Bandura, 1977) or adopting each other's beliefs through conversation (Chen, Minson, &

Tormala, 2010). On the other hand, dialogue may oversample areas of agreement relative to areas of disagreement because conversation allows speakers to prolong conversation over areas of common ground or agreement relative to uncommon ground or disagreement. Speakers may not appreciate the extent to which they constrain each other's responses and play an active role in shaping the content of the conversation (Gilbert & Jones, 1986), causing them to overestimate their similarity to one another after speaking.

Chapter 4: *What* to Talk About

Abstract

Opening up to others by revealing meaningful content strengthens social ties, relieves the psychological burdens of secrecy, and speeds the development of close relationships. People care considerably about the intimate details that they share with others but may expect others to be relatively indifferent to this content. People should therefore expect deep conversations to feel substantially more awkward than shallow ones and negative self-disclosures to lead to considerably harsher judgments than positive ones. Four experiments found support for this pattern of expectations and tested the extent to which these beliefs were accurately calibrated. Participants significantly underestimated how social others were, and they consequently overestimated the awkwardness of a deep conversation relative to a typical conversation (Experiments 9-10). They also expected others to care less about the warmth of one's self-disclosures than others did, and they therefore overestimated the reputational costs of revealing a negative secret compared to a positive one (Experiments 11-12). People may engage with others less deeply and openly than would be ideal for their well-being.

I next conducted four experiments examining how wisely people choose *what* to talk about. Opening up to others by revealing meaningful content strengthens social ties (Aron, Melinat, Aron, Vallone, & Bator, 1997; Collins & Miller, 1994), relieves the psychological burdens of secrecy (Pennebaker, 1997; Slepian & Moulton-Tetlock, 2019), and speeds the development of close relationships (Altman & Taylor, 1973; Derlega, Winstead, & Greene, 2001). Positive social relationships bring happiness and well-being (e.g., Diener & Seligman, 2002), and so those who spend more time engaged in meaningful conversations tend to be happier than those who spend relatively more time engaged in small talk (Mehl et al., 2010; Milek et al., 2018; see also Levine & Cohen, 2018).

People care substantially about the intimate details of their experiences but may be reluctant to reveal these details because they expect others to be relatively indifferent to oneself. Specifically, I hypothesized that people would expect others to care relatively little about one's intimate self-disclosures (Experiments 9-10) and would be relatively unforgiving when these disclosures were negative (Experiments 11-12).

However, others should respond more favorably than people expect for two reasons. First, people underestimate others' sociality (Epley & Schroeder, 2014; Shelton & Richeson, 2005), and so others are likely to take greater interest in the content of an intimate conversation than people expect (Experiments 9-10). Second, people underestimate how much others care about the warmth of one's actions, and so people should expect others to judge open and honest disclosures of negative information more harshly than others do (Experiments 11-12). People's miscalibrated expectancies of others' responses may cause them to have fewer deep and open conversations than would be ideal for their well-being.

Experiment 9: Typical vs. Deeper Conversations

I first tested whether people expect deep and intimate conversations to unfold less positively than they do. In Experiment 9, pairs of strangers 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. I then randomly assigned pairs to discuss the "control" questions or the "deeper" questions that one of the participants had generated. I hypothesized that participants who engaged in deep conversations would expect their conversations to feel considerably more awkward than participants who engaged in typical conversations. Because people tend to underestimate strangers' sociality, I hypothesized that participants in the deep condition would overestimate how awkward their conversations would feel and that participants in both conditions would feel more connected to one another and happier than they predicted.

Method

Participants. I targeted 100 pairs of participants and finished recruiting once that target was reached after data exclusions. I achieved this by recruiting 103 pairs of participants from separate university and community subject pools (N = 200 individuals after exclusions; M_{age} = 28.46, SD_{age} = 13.67, 49.00% female, 31.50% Caucasian) to complete the experiment in exchange for $6. I excluded 3 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 prior to 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:

> I 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 I 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, I 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 predicted how awkward (0 = *not at all awkward*; 10 = *very awkward*) and uncomfortable (0 = *not at all uncomfortable*; 10 = *very uncomfortable*) they would feel during the conversation, and how much they would enjoy the conversation (0 = *not at all*; 10 = *very much*), how strong a bond they would feel with their conversation partner (0 = *weak, like a stranger*; 10 = *strong, like a new friend*), how much they would like their conversation partner (0 = *not at all*; 10 = *very much*), how well they would feel they got to know their conversation partner's true beliefs, attitudes, preferences, and character (0 = *not well*; 10 = *very well*), and how happy they would feel about their conversation (0 = *not at all happy*; 10 = *extremely happy*). 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 felt understanding) was counterbalanced between pairs.

After completing predictions, 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 as they had predicted before the conversation, and then they reported their perceptions of their partner's experiences. Participants then completed the ten-item personality inventory (Gosling, Rentfrow, & Swann, 2003).

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

Results

The awkwardness items ($r_{predictions}$ = .84; $r_{experiences}$ = .76) and connectedness items ($\alpha_{predictions}$ = .94; $\alpha_{experiences}$ = .94) were highly correlated, and so I combined these items to form awkwardness and connectedness scales, respectively.

Manipulation check. To check whether the intimacy manipulation was effective, I recruited a separate group of participants from Amazon's Mechanical Turk (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% $CI_{difference}$ = [-2.17, -0.90], $d = -0.97$.

Awkwardness. Participants overestimated how awkward their conversations would feel, and consistent with my predictions, participants in the deep condition overestimated awkwardness somewhat more than did participants in the control condition. A 2 (conversation: control, deep) × 2 (phase: predictions, experiences) ANOVA with repeated measures on the second factor yielded a marginally significant main effect of conversation, $F(1, 98) = 2.89$, p = .092, η_p^2 = .03, such that participants in the deep condition reported directionally greater awkwardness, and a significant main effect of phase, $F(1, 98) = 58.60$, $p < .001$, η_p^2 = .37, such

that participants overestimated awkwardness. I also observed a marginally significant conversation × phase interaction effect, $F(1, 98) = 3.74$, $p = .056$, $\eta_p^2 = .04$, such that the participants in the deep condition overestimated awkwardness more than participants in the control condition (see Figure 9). Planned contrasts indicated that participants overestimated how awkward their conversation would be both in the control condition, paired $t(49) = 4.13$, $p < .001$, 95% $CI_{difference} = [0.57, 1.65]$, $d = 0.58$, and in the deep condition, paired $t(49) = 6.65$, $p < .001$, 95% $CI_{difference} = [1.30, 2.42]$, $d = 0.94$. 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% $CI_{difference} = [-1.82, -0.12]$, $d = -0.45$, even though experiences of awkwardness did not differ significantly between conditions, $t(98) = -0.60$, $p = .552$, 95% $CI_{difference} = [-0.95, 0.51]$, $d = -0.12$.

Connectedness. As predicted, participants underestimated how connected they would feel after speaking with their partner. A 2 (conversation: control, deep) × 2 (phase: predictions, experiences) ANOVA with repeated measures on the second factor yielded a main effect of conversation, $F(1, 98) = 8.67$, $p = .004$, $\eta_p^2 = .08$, such that participants reported greater connectedness in the deep condition than in the control condition, and also a main effect of phase, $F(1, 98) = 40.46$, $p < .001$, $\eta_p^2 = .29$, such that participants underestimated how connected they would feel to their partner after the conversation. The conversation × phase interaction effect was non-significant, $F(1, 98) = 0.01$, $p = .936$, $\eta_p^2 = .0001$. Planned contrasts indicated that although participants underestimated how connected they would feel in both the control, *paired* $t(49) = -4.69$, $p < .001$, 95% $CI_{difference} = [-1.44, -0.57]$, $d = -0.66$, and deep conditions, *paired* $t(49) = -4.32$, $p < .001$, 95% $CI_{difference} = [-1.44, -0.52]$, $d = -0.61$, 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% $CI_{difference} = [-1.58, -0.35]$, $d = -0.62$. 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 partner than did participants in the control condition, $t(98) = -2.33$, $p = .022$, 95% $CI_{difference} = [-1.74, -0.14]$, $d = -0.47$.

Happiness. As with the experience of connection, participants also underestimated how happy they would actually feel about their conversations. A 2 (conversation: control, deep) × 2 (phase: predictions, experiences) ANOVA with repeated measures on the second factor yielded a non-significant main effect of conversation, $F(1, 98) = 2.06$, $p = .154$, $\eta_p^2 = .02$, and a significant main effect of phase, $F(1, 98) = 45.07$, $p < .001$, $\eta_p^2 = .32$, such that participants underestimated happiness. The conversation × phase interaction was non-significant, $F(1, 98) = 1.84$, $p = .179$, $\eta_p^2 = .02$. Planned contrasts indicated that participants underestimated how happy they would feel about the conversation in both the control, *paired* $t(49) = -3.79$, $p < .001$, 95% $CI_{difference} = [-1.33, -0.41]$, $d = -0.54$, and deep conditions, *paired* $t(49) = -5.70$, $p < .001$, 95% $CI_{difference} = [-1.77, -0.85]$, $d = -0.81$. Participants did not expect to feel differently in the control and deep conditions, $t(98) = -0.73$, $p = .465$, 95% $CI_{difference} = [-0.85, 0.39]$, $d = -0.15$, but participants in the deep condition reported marginally greater happiness with the conversation when they were finished, $t(98) = -1.72$, $p = .088$, 95% $CI_{difference} = [-1.44, 0.10]$, $d = -0.34$.

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, Fs$(1, 98) \leq 2.28$, ps $\geq .134$, $\eta_p^2 \leq .02$, suggesting that choosing the topics to discuss does not meaningfully increase the accuracy of people's expectations about the outcomes of the conversation.

These findings were not consistently moderated in any clear way by personality. Overestimating awkwardness was not associated with any Big Five traits among participants in the control condition, but was associated with lower openness (β = 0.45, $t(94) = 4.34$, $p < .001$) 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 (β = 0.23, $t(94) = 2.01$, $p = .048$) among participants in the control condition but was not associated with any Big Five traits among participants in the deep condition.

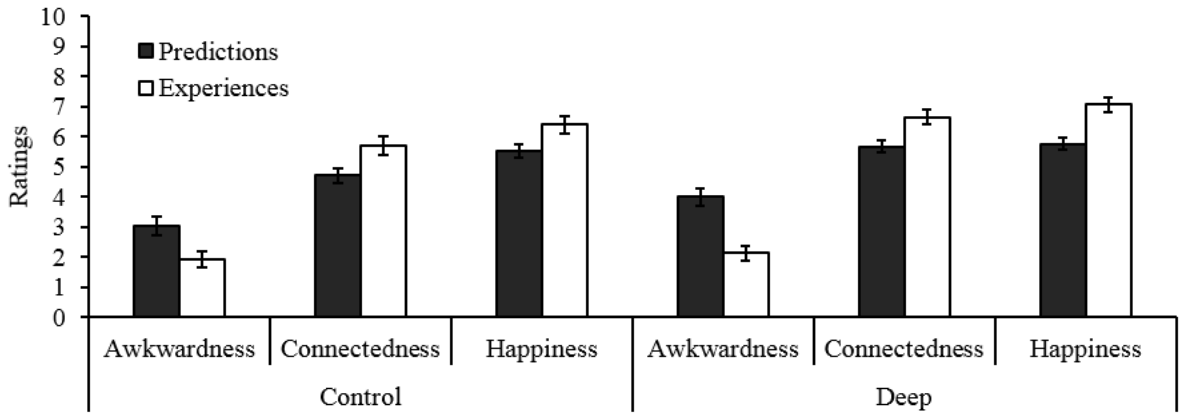

Figure 9. Mean awkwardness, connectedness, and happiness across conversation (control vs. deep) and phase (predictions vs. experiences). Error bars ±1 *SE* (Experiment 9).

Discussion

Consistent with my predictions, participants in Experiment 9 overestimated the awkwardness of a deep conversation directionally more than they overestimated the awkwardness of a typical conversation with a stranger. Participants in both conditions also underestimated how connected they would feel to the other person and how happy they would

feel about the conversation. People's conversations in daily life tend not to be very deep and meaningful (Mehl et al., 2010; Milek et al., 2018), and these norms may arise partly because people underestimate how positively a more meaningful conversation would be likely to unfold.

Experiment 10: Manipulating Perceived Care Via Relationships

People may underestimate the positivity of deep conversations with strangers because they expect distant others to be less social than they actually are. I tested this hypothesis in Experiment 10 by manipulating both whether participants engaged in a typical conversation or a deeper conversation and whether they spoke with a distant stranger or a close other. In the distant-stranger conditions, I expected to replicate the findings from the prior experiment: Participants should underestimate how much they would enjoy themselves and how happy they would feel about their conversations, and should overestimate the awkwardness of a deep conversation more than a typical conversation.

In the close-other conditions, I predicted a different pattern of results. People should expect close others to be substantially more caring than distant strangers because people receive more feedback from engaging with close others (Newcomb, 1956; Lott & Lott, 1974). I therefore hypothesized that participants in the close-other conditions would have relatively calibrated expectations about how social the other person would be during the conversation. For this reason, I also hypothesized that participants in the close-other condition would have better-calibrated expectations about how awkward they would feel, how much they would enjoy themselves, and how happy they would feel about their conversations compared to those in the distant-stranger condition.

Method

Participants. I targeted 200 pairs of participants and finished recruiting once that target was reached after data exclusions. I achieved this by recruiting 204 pairs of participants from several public parks (N = 400 individuals after exclusions; M_{age} = 35.27; SD_{age} = 16.21; 61.50% female; 61.50% Caucasian) to complete the study in exchange for a $5 gift card. I excluded 4 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 0.50% 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 consenting, 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 discussion questions that they might later ask and answer with the other participant. Participants in the distant-stranger condition followed a similar procedure to that used in Experiment 9: They first generated two control questions that they would typically discuss while getting to know somebody new and then generated two deeper

questions. Participants in the close-other condition received slightly modified instructions to ensure that they would not discuss information that they were already familiar with, such as their names or occupations: They were instructed to write two questions that they typically discuss with this person (control) and two that were deeper than those they typically discuss (deep).

The procedure was then largely identical to that of Experiment 9, except that I included slightly different dependent variables given that participants in the close condition were already acquainted and connected with each other. In particular, participants first predicted how much they would care about and feel concerned or interested in their own responses (0 = *not at all*; 10 = *quite a bit*) and how much their partner would care about and feel concerned or interested in the participant's responses (0 = *not at all*; 10 = *quite a bit*). Participants then predicted how awkward they would feel during the discussion (0 = *not at all awkward*; 10 = *very awkward*), how much they would enjoy the conversation (0 = *not at all*; 10 = *very much*), and how happy they would feel about the conversation (0 = *not at all happy*; 10 = *extremely happy*). 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 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 9, and then reported their experiences on the same measures they had predicted before the conversation. As a second manipulation check, participants also reported how intimate their conversation was (0 = *not intimate at all*; 10 = *extremely intimate*).

Finally, participants reported demographic information and received their compensation.

Results

Manipulation check. 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, $F(1, 196) = 0.61$, $p = .436$, $\eta_p^2 = .003$. 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, $F(1, 196) = 0.20$, $p = .658$, $\eta_p^2 = .001$. 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 expected, participants expected to care about their own responses more than their partner would, and this self/other gap was significantly larger in the deep conditions than in the control conditions. A 2 (conversation: control, deep) × 2 (relationship: distant, close) × 2 (target: self, partner) ANOVA on participants' expectations yielded a significant main effect of target, $F(1, 196) = 6.73$, $p = .010$, $\eta_p^2 = .03$, indicating that participants thought they would care more about their own responses than their partner would, qualified by a significant conversation × 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, $F(1, 98) = 0.06$, $p = .805$, $\eta_p^2 = .001$.

More important for the unique contribution of this experiment, pairs in the distant condition underestimated each other's care more than did pairs in the close condition. A 2 (conversation: control, deep) × 2 (relationship: distant, close) × 2 (evaluations: predictions,

experiences) ANOVA on the partner care measure with repeated measures on the third factor produced a significant main effect of phase, $F(1, 196) = 106.68$, $p < .001$, $\eta_p^2 = .35$, such that participants underestimated partner care. The conversation × phase interaction effect was non-significant, $F(1, 196) = 0.14$, $p = .704$, $\eta_p^2 = .001$, indicating that participants underestimated the recipients' care similarly in the deep and control conditions. Consistent with my predictions, I also observed a significant relationship × 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, $F(1, 98) = 156.61$, $p < .001$, $\eta_p^2 = .62$.

Awkwardness. Participants overestimated how awkward their conversations would feel across conditions, but participants in the deep condition did so more than participants in the control condition. Furthermore, and consistent with my predictions, participants' expectations were more calibrated in the close conditions than in the distant conditions. A 2 (conversation: control, deep) × 2 (relationship: distant, close) × 2 (evaluations: predictions, experiences) ANOVA yielded a significant main effect of phase, $F(1, 196) = 92.79$, $p < .001$, $\eta_p^2 = .32$, indicating that participants overestimated how awkward their conversations would feel across conditions, and a significant conversation × phase interaction effect, $F(1, 196) = 4.94$, $p = .027$, $\eta_p^2 = .02$, indicating that participants in the deep conditions overestimated the awkwardness of their conversations more than participants in the control conditions. Importantly, I also observed a significant relationship × phase interaction effect, $F(1, 196) = 11.05$, $p = .001$, $\eta_p^2 = .05$ (see Figure 10). 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 (M = 3.41, SD = 1.84) would feel marginally more awkward than those in the control condition (M = 2.70, SD = 1.93), $t(98)$ = -1.88, p = .062, 95% $CI_{difference}$ = [-1.46, 0.04], d = -0.38, but did not feel significantly different in experience (Ms = 1.49 vs. 1.56, respectively; SDs = 1.50 vs. 1.52), $t(98)$ = 0.23, p = .817, 95% $CI_{difference}$ = [-0.53, 0.67], d = 0.05. Among close others, participants in the deep condition likewise expected that their conversations (M = 2.76, SD = 1.91) would feel more awkward than those in the control condition (M = 1.81, SD = 1.76), $t(98)$ = -2.58, p = .011, 95% $CI_{difference}$ = [-1.68, -0.22], d = -0.52, but felt only marginally more awkward in actual experience (Ms = 1.88 vs. 1.20, respectively; SDs = 2.10 vs. 1.52), $t(98)$ = -1.86, p = .066, 95% $CI_{difference}$ = [-1.41, 0.05], d = -0.37. Once again, deep conversations were not as awkward and uncomfortable as expected.

Enjoyment. As predicted, participants underestimated how much they would enjoy their conversations across conditions, but participants in the distant conditions did so more than participants in the close conditions. A 2 (conversation: control, deep) × 2 (relationship: distant, close) × 2 (evaluations: predictions, experiences) ANOVA with repeated measures on the third factor yielded a significant main effect of phase, $F(1, 196) = 135.31$, $p < .001$, $\eta_p^2 = .41$, indicating that participants underestimated enjoyment, qualified by a significant relationship × 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, Fs$(1, 196) \leq 2.15$, ps $\geq .144$, η_p^2s $\leq .01$,

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, and consistent with my predictions, participants in the distant conditions underestimated happiness more than participants in the close conditions. A 2 (conversation: control, deep) × 2 (relationship: distant, close) × 2 (evaluations: predictions, experiences) ANOVA with repeated measures on the third factor yielded a significant main effect of phase, $F(1, 196) = 188.47$, $p < .001$, $\eta_p^2 = .49$, indicating that participants underestimated feelings of happiness, and a significant relationship × 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, Fs$(1, 196) \leq 3.28$, ps $\geq .072$, η_p^2s $\leq .02$, indicating that participants expected and experienced similar happiness in the control and deep conditions.

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

I performed a series of within-pairs mediational analyses with phase (prediction vs. 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 non-significant for awkwardness ($b = 0.25$, 95% CI = [-0.25, 0.82]), non-significant for

enjoyment (*b* = -0.30, 95% CI = [-0.76, 0.19]), and non-significant for happiness (*b* = -0.31, 95% CI = [-0.63, 0.05]). Among participants in the control condition who spoke with close others, the indirect effects were non-significant for awkwardness (*b* = 0.02, 95% CI = [-0.03, 0.24]), non-significant for enjoyment (*b* = -0.07, 95% CI = [-0.41, 0.09]), and non-significant for happiness (*b* = -0.06, 95% CI = [-0.29, 0.11]).

Among participants in the deep condition who spoke with distant strangers, the indirect effects were significant for awkwardness (*b* = 0.88, 95% CI = [0.36, 1.44]), non-significant for enjoyment (*b* = -0.28, 95% CI = [-1.13, 0.51]), and significant for happiness (*b* = -0.46, 95% CI = [-0.98, -0.12]). Among participants in the deep condition who spoke with close others, the indirect effects were non-significant for awkwardness (*b* = -0.004, 95% CI = [-0.25, 0.19]), significant for enjoyment (*b* = -0.21, 95% CI = [-0.50, -0.03]), and significant for happiness (*b* = -0.14, 95% CI = [-0.36, -0.02]). 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. I performed a series of between-pairs mediational analyses with relationship (close vs. distant) as the independent variable, underestimation of partner care as the mediating variable, and 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 non-significant for awkwardness (*b* = 0.27, 95% CI = [-0.04, 0.69]), significant for enjoyment (*b* = -0.57, 95% CI = [-0.97, -0.16]), and significant for happiness (*b* = -0.54, 95% CI = [-0.88, -0.24]). Among participants in the deep conditions, the indirect effects were also non-significant for awkwardness (*b* = 0.34, 95% CI = [-0.004, 0.78]),

significant for enjoyment (b = -0.41, 95% CI = [-0.91, -0.003]), and significant for happiness (b = -0.37, 95% CI = [-0.71, -0.14]). People's expectations about conversations with close others may be more calibrated because they correctly recognize how much close others will care about the content of their conversation.

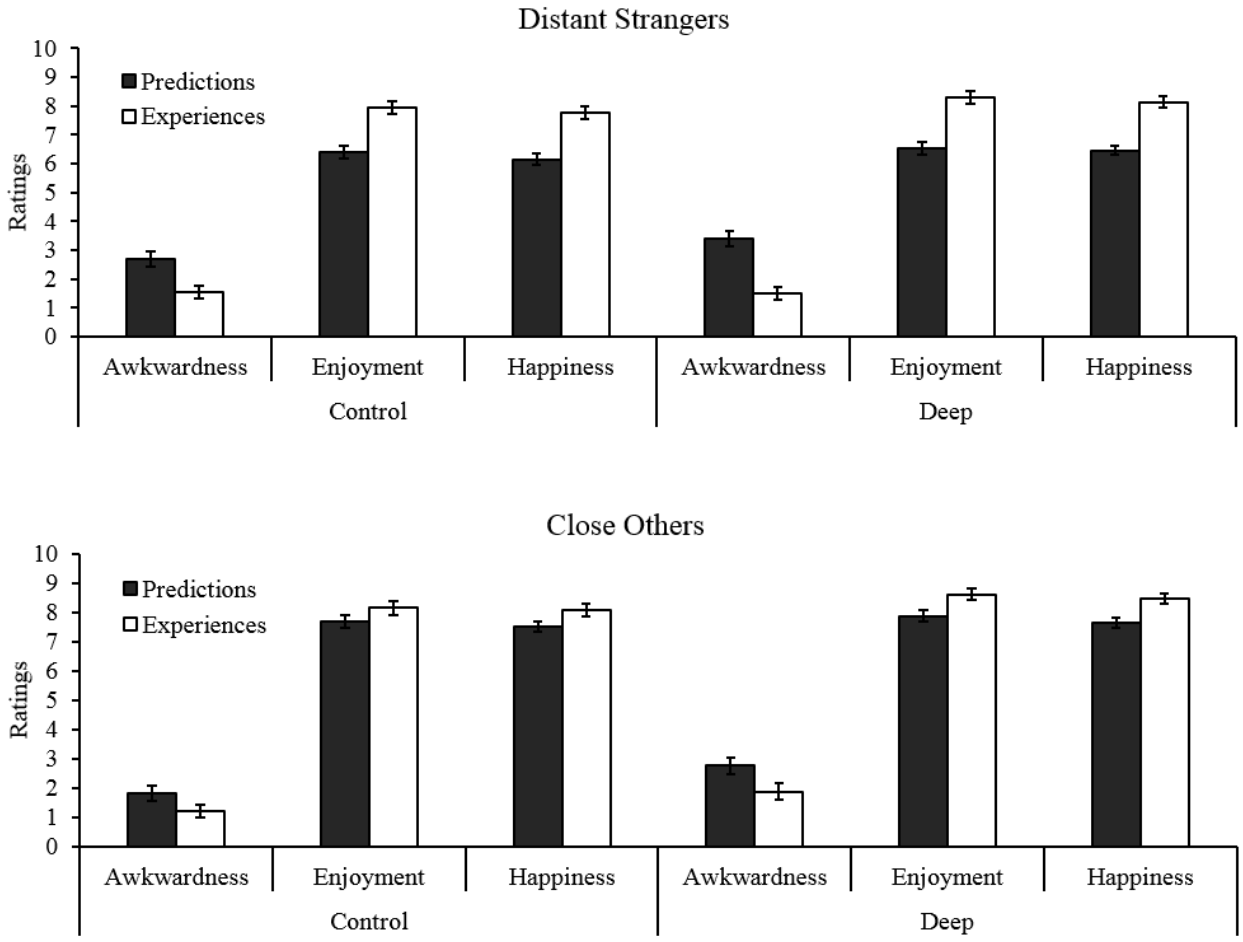

Figure 10. Mean awkwardness, enjoyment, and happiness across conversation (control vs. deep), relationship (distant vs. close) and phase (predictions vs. experiences). Error bars ±1 *SE* (Experiment 10).

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) × 2 (relationship: distant, close) × 2 (evaluations: predictions, experiences) × 2 (role: Writer, Receiver) ANOVAs on awkwardness, enjoyment, and happiness with repeated measures on the third and fourth factors yielded non-significant Phase × 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, $F(1, 196) = 0.31$, $p = .578$, $\eta_p^2 = .002$. People seem to underestimate the positive outcomes of conversations even when they generate the topics themselves.

Discussion

Experiment 10 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 a conversation with close others compared to distant strangers. As I observed in the prior experiment, participants overestimated how awkward their deep conversations with strangers would be more than their typical conversations, but underestimated how enjoyable and happy they would feel about both typical and deeper conversations.

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. Underestimating strangers' care may thus create a psychological barrier to having deeper conversations with distant others.

Experiment 11: Revealing Negative Secrets

Whereas the prior experiments find that people expect others to take less interest in the content of a deep conversation than others do, I next tested whether people underestimate others' forgiveness when the content one reveals is explicitly negative. Concealing a negative secret can

create a burden that increases stress, anxiety, and depression (Lane & Wegner, 1995; Larson & Chastain, 1990; Maas, Wismeijer, Van Assen, & Aquarius, 2012; Pennebaker, Barger, & Tiebout, 1989), as well as feelings of regret and inauthenticity (McDonald, Salerno, Greenaway, & Slepian, 2019). Stress produced by secrecy can compromise immune function and increase one's susceptibility to physical illness (Pennebaker, Hughes, & O'Heeron, 1987; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). Revealing one's secrets tends to mitigate the psychological costs of concealment (Pennebaker, 1997; Slepian & Moulton-Tetlock, 2019; Smyth, 1998), and yet people still withhold an average of five secrets that they have never shared with another person (Slepian, Chun, & Mason, 2017).

As described earlier, people expect others to care less about the warmth of one's actions than others do (Abele & Wojciszke, 2007; Epley et al., 2004). Sharing personally intimate information is a warm and trusting act, and so people should expect others to form less favorable impressions than others do when the content of the self-disclosure is negative. I therefore hypothesized that people would underestimate others' forgiveness upon revealing a negative secret.

To test this hypothesis, I conducted an experiment in which one participant lies to another and then later reveals this secret. I predicted that participants would overestimate how negatively they would be judged after revealing this secret.

Method

Participants. Participants were recruited in pairs to a university laboratory (N = 100 individuals; M_{age} = 19.36; SD_{age} = 1.10; 41.00% female) to complete an experiment in exchange for $4. No pairs were excluded from analyses.

Procedure. Participants were recruited in pairs, with the stipulation that the two participants did not know each other before beginning the experiment. One participant was randomly assigned to be the *revealer* and the other to be the *recipient*. The participants sat in front of adjacent computer monitors.

Participants were told that they would interact with one another by sharing information about themselves. Participants then experienced a modified version of the fast-friends paradigm in order to make them feel more connected to each other, and to provide a context for creating a secret (Aron, Melinat, Aron, Vallone, & Bator, 1997). Both participants received a packet containing five discussion questions: (1) "What would constitute a "perfect" day for you?"; (2) "Is there something you've dreamed of doing for a long time? Why haven't you done it?"; (3) "What is one of your favorite memories?"; (4) "What is one of the more embarrassing moments of your life?"; and (5) "Can you describe a time you cried in front of another person?" Both participants wrote down notes about how they would respond before beginning the discussion. In order to create a secret, the revealer's packet instructed him or her to lie in response to the fifth question. The instruction (accurately) stated that the other participant had not received a similar instruction to lie in response to the fifth question, and also had not been made aware that the revealer would lie in response to this question. Thus, after completing the discussion, revealers would be concealing from recipients the secret that they had lied in response to the fifth discussion question.

After writing down notes to help with the discussion, participants began the fast-friends procedure. For questions 1, 3, and 5, the participant randomly assigned to the role of recipient read the question aloud, answered the question, and then listened to the revealer's response to the same question. This order was reversed for questions 2 and 4.

Time 1 dependent measures. Following the modified fast-friends procedure, both revealers and recipients completed a short questionnaire that comprised our "Time 1" dependent measures. Recipients reported how honest they believed their partner was (-4 = *very dishonest*; 4 = *very honest*), how trustworthy they believed their partner was (-4 = *very untrustworthy*; 4 = *very trustworthy*), and how they currently felt (-4 = *very bad*; 4 = *very good*).

Revealers, in contrast, predicted how the recipients would currently rate them on the same scales (honesty, trustworthiness, and recipient mood). Revealers then imagined revealing that they had lied to their partner and predicted its impact on the recipients' evaluations, using the same measures that recipients would later use at Time 2: how it would influence the recipient's impression of them (-4 = *they'd think much less of me*; 4 = *they'd think much more of me*), how honest the recipient would perceive them to be (-4 = *very dishonest*; 4 = *very honest*), how trustworthy the recipient would perceive them to be (-4 = *very untrustworthy*; 4 = *very trustworthy*), and how the recipient would feel after the lie was revealed (-4 = *very bad*; 4 = *very good*). Revealers then reported their attitudes about revealing the lie: their preference for revealing the lie (-4 = *strongly prefer NOT REVEALING this information*; 4 = *strongly prefer REVEALING this information*), and whether they would rather reveal the lie themselves or have the experimenter reveal the lie (-4 = *strongly prefer THE EXPERIMENTER revealing this information*; 4 = *strongly prefer revealing this information MYSELF*). Finally, revealers reported how they felt right now (-4 = *very bad*; 4 = *very good*).

Secret revelation. The next page in the revealer's packet prompted him/her to reveal the lie: "For the purposes of this experiment, it is important that you reveal to your partner that you were lying. We'd now like you to tell your partner that we asked you to lie in response to Question #5." The revealer then turned to the recipient and followed these instructions in

whatever way they chose to reveal the secret. This interaction was not experimentally controlled beyond the instruction to the revealer: The revealer spoke until reaching his or her natural conclusion and the recipient was permitted to respond. When finished, both participants completed the "Time 2" dependent measures.

Time 2 dependent measures. After revealing the secret, the revealer reported how he or she felt (-4 = *very bad*; 4 = *very good*). In contrast, the recipient reported how the lie influenced his or her impression of the revealer (-4 = *I think much less of him/her*; 4 = *I think much more of him/her*), how honest the revealer seems (-4 = *very dishonest*; 4 = *very honest*), how trustworthy the revealer seems (-4 = *very untrustworthy*; 4 = *very trustworthy*), and how the recipient him or herself felt (-4 = *very bad*; 4 = *very good*).

Both participants then reported demographic information and were debriefed.

Results

I predicted that revealers would overestimate how harshly they would be judged by recipients after revealing the secret. I first tested this by comparing revealers' predictions of the recipients' evaluations before revealing the secret against the revealer's actual evaluations after the secret was revealed. Revealers significantly overestimated how negatively the recipient's impression would change, $t(49) = -3.29$, $p = .002$, 95% $CI_{difference} = [-1.64, -0.40]$, $d = -0.47$, underestimated how trustworthy they would seem to recipients, $t(49) = -7.98$, $p < .001$, 95% $CI_{difference} = [-3.81, -2.27]$, $d = -1.13$, underestimated how honest they would seem to recipients, $t(49) = -6.67$, $p < .001$, 95% $CI_{difference} = [-3.67, -1.97]$, $d = -0.94$, and underestimated the recipient's mood, $t(49) = -6.79$, $p < .001$, 95% $CI_{difference} = [-2.72, -1.48]$, $d = -0.96$ (see Figure 11). Revealers expected to be judged more negatively by recipients for lying than they actually were.

I next tested the hypotheses by comparing revealers' expectations about the change in recipients' evaluations, before versus after revealing the lie, against recipients' actual change in evaluations. Again, revealers (M = -3.54, SD = 2.64) overestimated how negatively recipients' impressions of their honesty would change (M = -1.00, SD = 1.48), $t(49) = -5.88$, $p < .001$, 95% $CI_{difference}$ = [-3.41, -1.67], d = -0.83, overestimated (M = -3.28, SD = 2.50) how negatively recipients' impressions of their trustworthiness would change (M = -0.84, SD = 1.30), $t(49) = -5.76$, $p < .001$, 95% $CI_{difference}$ = [-3.29, -1.59], d = -0.81, and overestimated (M = -2.56, SD = 1.95) and how negatively the recipients' mood would change (M = -0.68, SD = 1.35), $t(49) = -5.38$, $p < .001$, 95% $CI_{difference}$ = [-2.58, -1.18], d = -0.76. Recipients' evaluations and mood became slightly more negative after learning that the revealer had lied, but they did not change as negatively as the revealers themselves expected.

I also predicted that revealers who expected recipients to react more negatively would also report being less inclined to reveal their lie. Consistent with this prediction, revealers' desire to reveal the information correlated positively (r = .30) with beliefs about how their recipients' impressions would change, $t(48) = 2.21$, 95% CI = [0.03, 0.54], p = .032. Inconsistent with this prediction, revealers' desire to reveal the information did not correlate significantly with beliefs about how honest (r = -.12), $t(48) = -0.85$, 95% CI = [-.39, .16], p = .398, or trustworthy (r = -.10), $t(48) = -0.71$, 95% CI = [-.37, .18], p = .483, they would seem after revealing the secret. It is unclear whether this mixed evidence comes from something unique about perceptions of honesty and trustworthiness, or from revealers in this experiment already knowing that they were going to reveal their secret to the recipient later in the experiment.

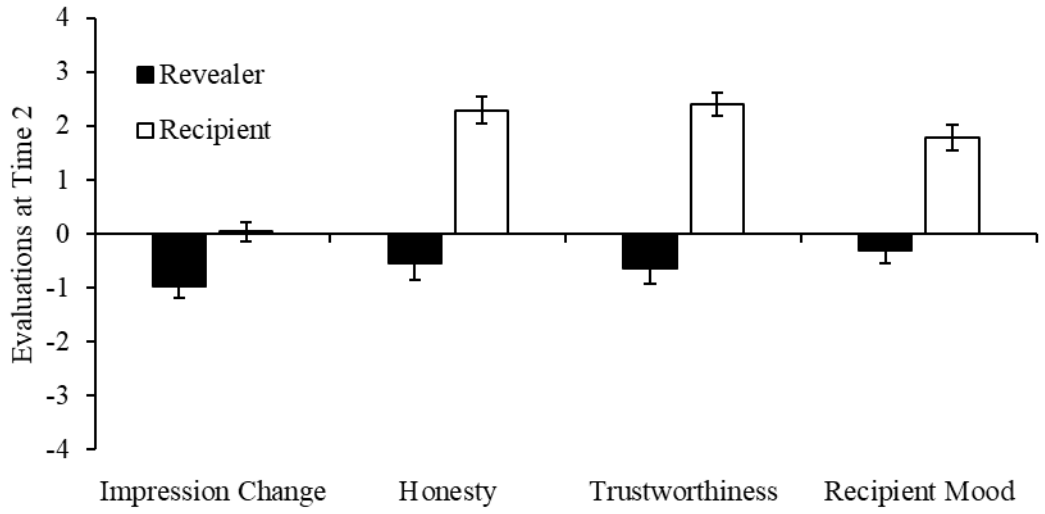

Figure 11. Mean predictions and evaluations by role (Revealer vs. Recipient). Error bars ±1 *SE* (Experiment 11).

Discussion

Participants asked to reveal that they had just lied to another person overestimated how harshly they would be judged by the recipient of this secret. Specifically, revealers expected others to view them as less trustworthy and honest, and less positively overall, than they actually did. Expecting others to react more negatively than they do may thus create a psychological barrier to greater transparency.

Experiment 12: Revealing Negative vs. Positive Secrets

Next I examined why people underestimate others' forgiveness. Revealers may focus largely on the negative content of a secret whereas recipients may focus more on the positive characteristics of openness and honesty that one conveys by sharing this content. I therefore hypothesized that miscalibration between revealers and recipients would be reduced for positive secrets because both the content of the secret *and* the openness of the revelation convey positive

characteristics of the revealer. I tested this hypothesis in Experiment 12 using a hypothetical scenario in which one person reveals either a negative or positive secret to another person.

Method

Participants. Participants were recruited from Amazon Mechanical Turk (N = 181; M_{age} = 36.40; SD_{age} = 11.68; 46.41% female, 69.06% Caucasian) to complete the experiment in exchange for $0.60. An additional 38 participants were excluded because they failed an attention check.

All participants inputted the initials of a friend and were assigned to one cell in a 2 (role: revealer, recipient) × 2 (valence: negative, positive) design. Participants then read a scenario in which one person either steals food from a roommate's cabinets (negative secret), or replenishes the roommate's cabinets with food (positive secret), almost every night for a month and conceals this behavior from the roommate as a secret (see Appendix B).

After reading the scenario, all participants were told that a range of positive or negative thoughts might come to the recipient's mind after hearing the secret. Participants in the revealer condition then wrote out the three thoughts that seemed most likely to impact the recipient's impression of them, whereas those in the recipient condition wrote out three thoughts that seemed most likely to impact their own impression of the revealer. Participants then coded the valence of each thought separately from -5 (*very negative*) to 0 (*neither negative nor positive*) to 5 (*very positive*).

Participants then imagined disclosing (revealers) or hearing (recipients) the secret and completed the primary measures. Revealers predicted how sharing the secret would impact the recipient's impression of them (-5 = *they'd think much less of me*; 0 = *they'd think no differently of me*; 5 = *they'd think much more of me*) and reported the degree to which they preferred to

reveal the secret to the recipient (0 = *definitely not reveal*; 10 = *definitely reveal*). Recipients completed two corresponding measures worded from the recipient's perspective.

Participants then completed three attention checks: They reported whether they imagined being the revealer or the recipient in the scenario, they reported whether one person in the scenario had stolen food from the cabinets versus replenished the cabinets with food, and they reported whether the person whose initials they had inputted was somebody real who they considered themselves to be friends with. Finally, participants completed demographic items.

Results

A 2 (role: revealer, recipient) × 2 (valence: positive, negative) ANOVA with impression change as the dependent variable yielded a significant main effect of role such that revealers expected less positive impression changes relative to recipients, $F(1, 177) = 22.56$, $p < .001$, $\eta_p^2 = .11$, and a main effect of valence such that impression change was more favorable for positive (vs. negative) secrets, $F(1, 177) = 98.43$, $p < .001$, $\eta_p^2 = .36$. Consistent with my predictions, these main effects were qualified by a significant role × valence interaction, $F(1, 177) = 6.76$, $p = .010$, $\eta_p^2 = .04$, such that the gap between revealers' expectations and recipients' reported impressions was significantly smaller for positive secrets (see Figure 12). For negative secrets, revealers expected more negative impression changes than recipients did, $F(1, 177) = 25.49$, $p < .001$, $\eta_p^2 = .13$. Revealers expected that recipients' impressions would change for the worse ($M = -1.82$, $SD = 2.58$), $t(48) = -4.93$, $p < .001$, 95% CI = [-2.56, -1.08], $d = -0.70$, whereas recipients ($M = 0.65$, $SD = 2.00$) expected their impressions to change marginally for better following a negative secret revelation, $t(36) = 1.97$, $p = .057$, 95% CI = [-0.02, 1.32], $d = 0.32$. For positive secrets, revealers' expectations did not differ significantly from recipients' reported evaluations,

$F(1, 177) = 2.46$, $p = .119$, $\eta_p^2 = .01$. Revealers predicted ($M = 2.38$, $SD = 2.47$), and recipients reported ($M = 3.10$, $SD = 1.75$), positive changes in impression, ts ≥ 6.61, ps $< .001$, ds ≥ 0.96.

Next I examined the thought-valence measures. I performed a 2 (role: revealer, recipient) × 2 (valence: positive, negative) ANOVA with mean thought valence as the dependent measure. I observed a significant main effect of role such that recipients reported more positive thoughts than revealers, $F(1, 177) = 26.25$, $p < .001$, $\eta_p^2 = .13$, and a main effect of valence such that participants reported more positive thoughts for positive (vs. negative) secrets, $F(1, 177) = 84.05$, $p < .001$, $\eta_p^2 = .32$. The role × valence interaction effect was nonsignificant, $F(1, 177) = 1.86$, $p = .174$, $\eta_p^2 = .01$, indicating that thought valence between revealers and recipients did not vary significantly based on the valence of the secret.

I predicted that variance in thought valence would explain variance in miscalibration across negative and positive secrets. To test this, I performed a mediational analysis with role, valence, and the role × valence interaction effect as independent variables, mean thought valence as the mediating variable, and impression change as the dependent variable. The indirect effect of role on impression change was significant, $b = 1.08$, 95% CI = [0.53, 1.77], and the indirect effect of valence on impression change was also significant, $b = 1.76$, 95% CI = [1.05, 2.56], but the indirect effect of the role × valence interaction effect on impression change was nonsignificant, $b = -0.45$, 95% CI = [-1.16, 0.20]. These results indicate that variance in thought valence helps to explain differences between predicted and actual impressions as well as differences in impressions between negative and positive secret revelations, but does not fully explain the interaction effect on the primary impression measure.

Moreover, thought valence should explain differences between revealer and recipient evaluations for negative secrets in particular. To the extent that negative thoughts are more

highly accessible to revealers, they should also expect to be judged less favorably than recipients actually report. I tested this by performing a mediational analysis for negative secrets using role as the independent variable, mean thought valence as the mediating variable, and impression change as the dependent variable. The indirect effect of role on impression change was significant, $b = 0.75$, 95% CI = [0.22, 1.39], indicating significant mediation. These findings are consistent with the mediational results from Experiment 4 and suggest that revealers overestimate the reputational costs of revealing their negative secrets in part because negative thoughts come to mind for revealers more so than recipients.

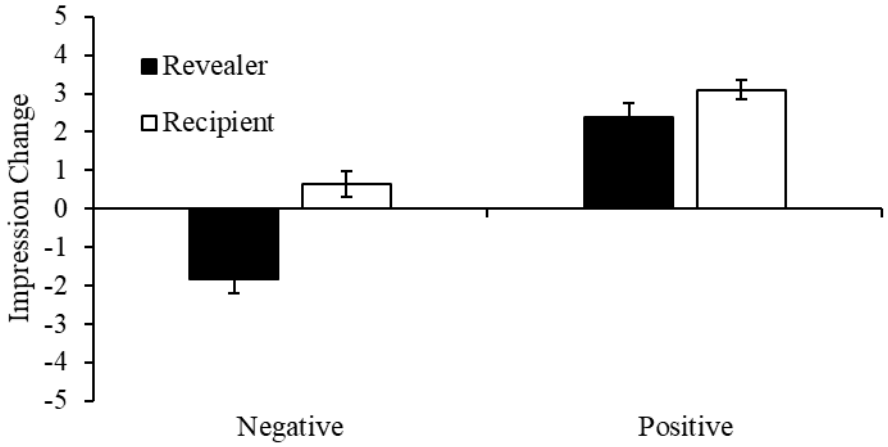

Figure 12. Mean impression change across role and valence. Error bars ±1 *SE* (Experiment 12).

I next analyzed participants' desire to reveal the secret. I performed a 2 (role: revealer, recipient) × 2 (valence: positive, negative) ANOVA with desire to reveal as the dependent measure and observed a main effect of role such that revealers reported less desire to reveal the secret relative to recipients, $F(1, 177) = 20.37$, $p < .001$, $\eta_p^2 = .10$, and a main effect of valence such that participants reported greater desire to reveal negative secrets relative to positive ones, $F(1, 177) = 6.07$, $p = .015$, $\eta_p^2 = .03$. The role × valence interaction effect was nonsignificant, $F(1, 177) = 2.35$, $p = .127$, $\eta_p^2 = .01$. Although the interaction was nonsignificant, analyzing

preferences of recipients and revealers separately makes it clear that the main effect of valence comes largely from the revealers' preferences. Recipients' desire to hear the secret did not differ significantly depending on whether the secret was negative (M = 7.81, SD = 2.88) or positive (M = 7.35, SD = 3.04), $F(1, 177) = 0.40$, $p = .526$, $\eta_p^2 = .002$. In contrast, revealers' desire to share the secret was significantly greater when the secret was negative (M = 6.35, SD = 3.62) than positive (M = 4.38, SD = 3.46), $F(1, 177) = 8.58$, $p = .004$, $\eta_p^2 = .05$. Of course, many secret revealers may have considered their generous acts to be surprises that would later be revealed to the recipients. These results simply indicate that a fear of being judged harshly is not the only reason one would be reluctant to reveal a secret.

Finally, I computed correlations between revealers' desire to reveal the secret and their predicted evaluations. The desire to reveal the secret correlated positively with predicted impression change for both positive revealers, $r = .40$, $t(45) = 2.90$, $p = .006$, 95% CI = [.12, .61], and for negative revealers, $r = .50$, $t(47) = 3.93$, $p < .001$, 95% CI = [.25, .68]. The perceived reputational consequences of revealing a secret again seems to be at least partly guiding revealers' willingness to share their secrets.

Discussion

Replicating the findings of the prior experiment, participants who imagined revealing a negative secret expected harsher evaluations compared to those who imagined receiving the secret. Extending these findings, this miscalibration between revealers and recipients partly attenuated in the positive-secret conditions. Underestimating how much others care about the warmth of one's actions may lead people to expect negative self-disclosures to be more damaging to a relationship than these disclosures are.

General Discussion

People expect others to respond less favorably to one's intimate self-disclosures than others do. Participants underestimated how much others would care about the content of a deeper conversation (Experiments 9-10) and expected others to judge them more harshly after revealing negative content than others did (Experiments 11-12). The expectancy-value theory predicts that these miscalibrated expectancies may create a psychological barrier to opening up to others.

These findings meaningfully advance the research literatures on self-disclosure and well-being. Decisions to open up to another person or remain more guarded are based partly on how people expect that their interaction partner will respond (Afifi & Steuber, 2009; Kardas, Kumar, & Epley, 2019; Omarzu, 2000; Ruan, Reis, Clark, Hirsch, & Bink, 2019), 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. These experiments highlight the importance of combining these two streams of research. The psychological processes that lead people to underestimate others' care and forgiveness may help to explain why people forego many opportunities to form stronger connections with others.

Future research should examine whether differences between the expected and actual consequences of self-disclosure depend on the nature of the content being revealed. As discussed earlier, people tend to be more concerned about their own competence than warmth, but this pattern reverses when people think about others (Abele & Wojciszke, 2007). When people consider sharing content that reveals a lapse in competence—entering financial debt or suffering a failure of self-control, for example—they may expect others to judge them especially harshly. But because others care more about one's warmth, their judgments may be guided less by the

details of the self-disclosure and more by the trustworthiness you convey by opening up to them. People may thus be especially likely to underestimate others' forgiving reactions upon sharing a lapse in competence relative to a lapse in warmth.

Chapter 5: Calibrating Judgment Increases Sociality

Abstract

The expectancy-value theory predicts that people's social engagement decisions are guided partly by their expectancies of others' responses. Underestimating how favorably others are likely to respond may therefore create a psychological barrier to engaging. Three experiments test whether calibrating people's expectancies removes this psychological barrier and encourages people to be more social. Participants chose deeper questions for conversation (Experiments 13a-b) and were more willing to reveal a negative secret (Experiment 14) when they expected others to respond relatively favorably, consistent with the expectancy-value theory. Calibrating people's expectancies about others may lead people to engage with others in ways that strengthen their social ties and enhance their well-being.

The expectancy-value theory predicts that people's social engagement decisions are closely tied to their social judgments. People remain disengaged from others in part because they underestimate how favorably others are likely to respond, and in turn, calibrating people's expectancies should prompt them to behave more socially toward others.

I tested this hypothesis in three experiments: First, I tested whether manipulating people's expectations about others' sociality would impact their preferences for shallow versus deep conversation topics (Experiments 13a-b). I then tested whether calibrating people's expectancies of others' forgiveness would influence their willingness to transparently reveal a negative secret (Experiment 14).

Experiments 13a-b: Calibrating Judgment Increases Interest in Deep Conversation

In Experiments 13a-b, participants read a list of 20 pre-tested questions that varied in intimacy, from very shallow and superficial to very deep and intimate, and then selected the 5 questions that they would prefer to discuss with another person. In Experiment 13a, participants imagined having a conversation with a stranger who they had observed being very caring and considerate of others or very uncaring and indifferent to others. In Experiment 13b, participants imagined having a conversation with a stranger after being told that people tend to underestimate how much others care during conversation, being told that people tend to overestimate how much others care, or after receiving no information about the accuracy of people's expectations.

I hypothesized that participants would choose deeper conversation questions when they imagined talking with a caring (vs. uncaring) person in Experiment 13a and when they learned that they people tend to underestimate (vs. overestimate) others' care in Experiment 13b. If underestimating others' sociality 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.

Pre-test

Before conducting the experiments, I pre-tested 20 discussion questions for perceived intimacy (see Appendix C). In the pre-test, participants imagined participating in an experiment in which they would discuss a series of questions with a stranger they had never met before. They then viewed each of the 20 questions separately. For each question, participants reported how much their answers would reveal about their identity (0 = *nothing at all*; 10 = *quite a bit*), how intimate the question was (0 = *not intimate at all*; 10 = *extremely intimate*), the degree to which the question would require them to reveal meaningful information about themselves (0 = *not at all*; 10 = *quite a bit*), and how vulnerable they would feel while asking and answering the question with a stranger (0 = *not at all vulnerable*; 10 = *extremely vulnerable*). The four items were highly correlated ($\alpha = .96$) and so I combined them to form an intimacy scale. The 10 questions with the highest average intimacy ratings were designated as deep questions and the 10 questions with the lowest average intimacy ratings were designated as shallow questions.

Method

Participants. For Experiment 13a, I recruited 100 participants from Amazon's Mechanical Turk ($N = 93$ after exclusions; $M_{age} = 35.30$; $SD_{age} = 9.99$; 36.56% female; 78.49% Caucasian) to complete the study in exchange for $1.75. I excluded 7 participants from analyses because they failed the attention check described below.

For Experiment 13b, I recruited 160 participants from Amazon's Mechanical Turk ($N = 130$ after exclusions; $M_{age} = 35.92$; $SD_{age} = 12.36$; 46.15% female; 75.38% Caucasian) to

complete the study in exchange for $1.20. I excluded 30 of these participants because they failed one or more attention of the checks described below.

Procedure. Participants in Experiment 13a imagined visiting a "social interaction" research lab where they would speak with another study participant they had never met before. They were told that this discussion would be 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 list of 20 discussion questions and selected the 5 they would most like to ask and answer while speaking with the other person. The questions were presented in random order and were not labeled as shallow or deep. After selecting 5 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 13b was identical to 13a with three exceptions. First, I designed manipulations that either did or did not inform participants that their expectations were 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 5 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 their own care or the other person's care. Third, I 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 the previous research experiments.

Results

As predicted, participants in the caring condition of Experiment 13a ($M = 3.09$, $SD = 1.44$) selected more deep questions than did participants in the uncaring condition ($M = 2.02$, $SD = 1.73$), $t(91) = 3.23$, $p = .002$, 95% $CI_{difference} = [0.41, 1.72]$, $d = 0.67$. 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% $CI_{difference} = [0.15, 1.27]$, $d = 0.53$.

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 to participants in the uncaring condition. I therefore computed each participant's mean desire to discuss the 10 shallow questions and the 10 deep questions, separately. Consistent with my predictions, participants in the caring condition were particularly interested in discussing deep questions. A 2 (partner: caring, uncaring) × 2 (conversation: shallow, deep) ANOVA with repeated measures on the second factor yielded a marginally significant main effect of partner, $F(1, 91) = 3.08$, $p = .083$, $\eta_p^2 = .03$, and a significant main effect of conversation, $F(1, 91) = 19.30$, $p < .001$, $\eta_p^2 = .17$, qualified by a significant partner × intimacy interaction, $F(1, 91) = 9.52$, $p = .003$, $\eta_p^2 = .09$ (see Figure 13).

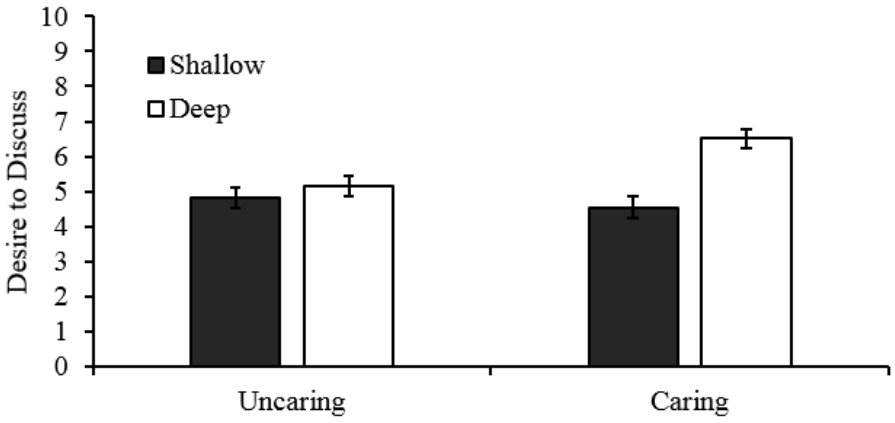

Figure 13. Mean desire to discuss across partner (uncaring vs. caring) and conversation (shallow vs. deep). Error bars ±1 *SE* (Experiment 13a).

Participants in the caring and uncaring conditions did not differ in their desire to discuss shallow questions, $t(91) = -0.70$, $p = .486$, 95% $CI_{difference} = [-1.07, 0.51]$, $d = -0.14$, but participants in the caring condition were significantly more interested in discussing the deep questions, $t(91) = 3.30$, $p = .001$, 95% $CI_{difference} = [0.54, 2.16]$, $d = 0.68$. Underestimating others' care may thus create a barrier to having more meaningful conversations.

In Experiment 13b, a one-way ANOVA indicated that the number of deep questions selected varied significantly by condition, $F(2, 127) = 3.71$, $p = .027$, $\eta_p^2 = .06$. 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% $CI_{difference} = [-1.26, -0.19]$, $d = -0.57$. 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, $t(127) = -0.95$, $p = .344$, 95% $CI_{difference} = [-0.83, 0.29]$, $d = -0.21$, nor the overestimation condition, $t(127) = -1.69$, $p = .094$, 95% $CI_{difference} = [-1.00, 0.08]$, $d = -0.36$. 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% $CI_{difference} = [-1.06, -0.14]$, $d = -0.55$. 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% $CI_{difference} = [-0.84, 0.11]$, $d = -0.33$, or the overestimation condition, $t(127) = 1.03$, $p = .304$, 95% $CI_{difference} = [-0.22, 0.70]$, $d = 0.22$.

As with Experiment 13a, I tested whether these differences arose from differences in interest in discussing deep questions, shallow questions, or possibly both. I did so by comparing

participants' reported desire to discuss deep and shallow questions in the underestimation and overestimation conditions. A 2 (care: underestimation, overestimation) × 2 (conversation: shallow, deep) ANOVA with repeated measures on the second factor and mean interest as the dependent measure yielded a significant main effect of partner, $F(1, 87) = 5.89$, $p = .017$, $\eta_p^2 = .06$, indicating that participants in the underestimation condition were more interested in discussing the questions, and a significant main effect of conversation, $F(1, 87) = 4.62$, $p = .034$, $\eta_p^2 = .05$, indicating that participants in both conditions were more interested in discussing deep versus shallow questions. The partner × conversation interaction effect was non-significant, $F(1, 87) = 0.69$, $p = .410$, $\eta_p^2 = .01$. 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% $CI_{difference} = [-1.65, 0.13]$, $d = -0.36$, but reported significantly greater interest in discussing deep questions, $t(127) = -2.68$, $p = .008$, 95% $CI_{difference} = [-2.04, -0.31]$, $d = -0.57$ (see Figure 14).

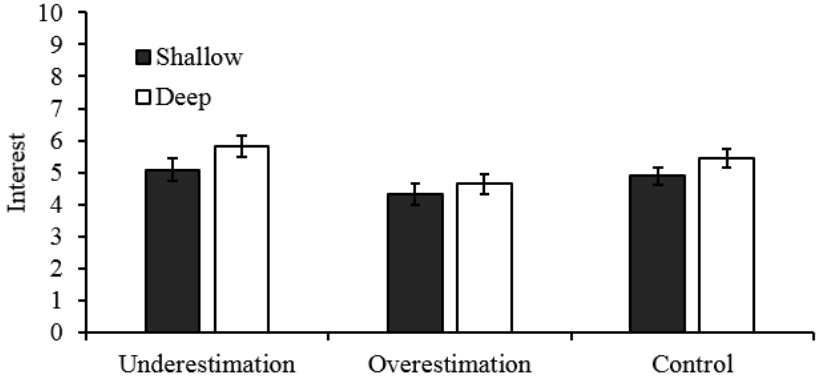

Figure 14. Mean interest across care (overestimation vs. underestimation vs. control) and conversation (shallow vs. deep). Error bars ±1 *SE* (Experiment 13b).

Discussion

People may be reluctant to engage in a relatively deep conversations when they expect their conversation partner to be indifferent to the content of the conversation. Experiments 13a and 13b suggest that removing this barrier by calibrating people's expectations may lead them to prefer relatively deeper conversations with others. Participants in Experiment 13a chose deeper questions when they expected their conversation partner to be caring rather than indifferent. Participants in Experiment 13b 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 responses in the control condition in Experiment 13b differed neither from those in the overestimation nor underestimation condition, they were at least descriptively more similar to those in the underestimation condition. Interpreting this result is difficult because the experiment did not include a manipulation check to test how much the manipulation actually affected participants' expectations. It could be that it is simply easier to convince people that others care less than expected than to convince them that others care more. These results therefore confirm that manipulating people's perceptions of others' care can affect their preferences for deep conversation, but they cannot at this point confirm whether weakening or strengthening that barrier is systematically more effective for changing behavior.

Experiment 14: Calibrating Judgment Increases Transparency

The prior experiments suggest that encouraging people to perceive others as highly social leads them to prefer deeper conversations. I next tested whether calibrating people's expectancies of others' reactions encourages them to reveal explicitly *negative* content as well.

In Experiment 14, participants spoke with one another in the lab (as in Experiment 11), where one participant (the revealer) was asked to lie to the other (the recipient) while responding to one of the conversation questions. Revealers in the *mild-judgment* condition were told that they likely would not be judged harshly for having lied in response to one of the get-to-know-you discussion questions, whereas revealers in the *harsh-judgment* condition were told that they would likely be judged severely for having lied. Revealers in the *control* condition were told nothing about how they should expect to be judged. I predicted that participants in the mild-judgment condition would expect to be judged less severely than harsh-judgment and control participants and would consequently be more likely to reveal their secret.

Method

Participants. Participants were recruited in pairs from university and community participant pools (N = 300 individuals; M_{age} = 27.62; SD_{age} = 12.47; 47.33% female, 32.00% Caucasian) to complete an experiment in exchange for $4. I excluded 19 pairs of participants based on criteria included in the pre-registration for this experiment: In 13 pairs, revealers reported that they did not lie as instructed; in 4 pairs, participants did not follow instructions when the lie was revealed; in 1 pair, the recipient did not respond to the designated discussion questions; and in 1 pair, the recipient saw the revealer's instruction to lie before engaging in discussion with the revealer.

Procedure. Participants were recruited in pairs, with the stipulation that the two participants did not know each other before beginning the experiment. One participant was randomly assigned to be the *revealer* and the other the *recipient*. Pairs were randomly assigned to one of three between-pairs conditions: harsh evaluation, mild evaluation, and control.

The procedure was identical to Experiment 11 with the following exceptions. First, rather than ask participants to report predicted or actual *change*s in impression at Time 2, I instead asked participants to report predicted or actual impressions at both Time 1 and Time 2 separately on a scale ranging from -4 (*very negative*) to 4 (*very positive*). Second, I removed the items asking revealers to report the degree to which they would rather conceal or reveal the secret, and the degree to which they would rather reveal the secret themselves or allow the experimenter to reveal the secret. Third, after participants engaged in the discussion and completed Time 1 dependent measures, the experimenter spoke privately with the revealer and told the revealer that he or she could choose to either conceal or reveal the lie to the recipient later in the experiment. At this point the experimenter verbally manipulated the revealer's expectations about the consequences of revealing the lie: In the *harsh-judgment* condition, the experimenter stated, "You should know that in our past research we've found that people are actually kind of harsh in their judgments once they find out that another person has lied to them. They seem not to be very forgiving of what happened in the experiment." In the *mild-judgment* condition, the experimenter stated, "You should know that in our past research we've found that people don't actually judge others very harshly in situations like these. They tend to be quite charitable in their impressions of what happened." Finally, in the *control* condition, the experimenter omitted details about how the revealer would likely be evaluated upon revealing the secret, as in Experiment 11. The experimenter then emphasized to the revealer that the choice was completely up to him or her, and that the revealer should think for a moment before choosing to conceal or reveal the secret by selecting either option on the computer screen. Regardless of their choice, all revealers then imagined revealing the lie to the recipient and completed Time 2 predictions about how they

would be evaluated by recipients upon doing so. The experimenter stayed in the room while revealers decided whether to reveal the lie and reported predictions.

Then the experimenter brought the recipient back into the room. Revealers who had chosen to reveal the lie then shared their secret with the recipient, whereas revealers who chose to conceal the lie did not share their secret with the recipient. Afterward, both revealers and recipients completed additional measures: The revealer reported his or her current mood from -4 (*very bad*) to 4 (*very good*) and the recipient reported Time 2 evaluations of the revealer. Revealers were also asked to report whether they had actually lied, as instructed, in response to the final discussion question (*yes, I did tell a lie* vs. *no, I did not tell a lie*).

Results

Manipulation check. The manipulation of revealers' expectations was effective. Mild-judgment revealers ($M_{difference}$ = -0.98, $SD_{difference}$ = 2.14) predicted less negative changes in perceived honesty compared to harsh-judgment revealers ($M_{difference}$ = -2.32, $SD_{difference}$ = 2.46), $t(147) = 2.65$, $p = .009$, 95% $CI_{difference}$ = [0.34, 2.34], $d = 0.53$, predicted less negative changes in perceived trustworthiness ($M_{difference}$ = -0.88, $SD_{difference}$ = 1.90) compared to harsh-judgment revealers ($M_{difference}$ = -2.40, $SD_{difference}$ = 2.40), $t(147) = 3.09$, $p = .002$, 95% $CI_{difference}$ = [0.55, 2.49], $d = 0.62$, predicted less negative changes in impression ($M_{difference}$ = -0.34, $SD_{difference}$ = 1.41) compared to harsh-judgment revealers ($M_{difference}$ = -1.74, $SD_{difference}$ = 2.28), $t(147) = 3.39$, $p < .001$, 95% $CI_{difference}$ = [0.58, 2.22], $d = 0.68$, and predicted less negative changes in the recipient's mood ($M_{difference}$ = -0.66, $SD_{difference}$ = 1.32) compared to harsh-judgment revealers ($M_{difference}$ = -1.68, $SD_{difference}$ = 2.10), $t(147) = 2.41$, $p = .017$, 95% $CI_{difference}$ = [0.18, 1.86], d = 0.48.

I also examined the effectiveness of the manipulation by comparing revealers' Time 2 predictions directly, across the mild-judgment and harsh-judgment conditions. Mild-judgment revealers (M = 1.88, SD = 1.86) expected to be seen as more honest than harsh-judgment revealers (M = 0.68, SD = 2.48), $t(147) = 2.53$, $p = .012$, 95% $CI_{difference}$ = [0.26, 2.14], $d = 0.51$, expected to be seen as more trustworthy (M = 1.94, SD = 1.77) compared to harsh-judgment revealers (M = 0.44, SD = 2.37), $t(147) = 3.25$, $p = .001$, 95% $CI_{difference}$ = [0.59, 2.41], $d = 0.65$, expected recipients to have more positive impressions of them (M = 2.12, SD = 1.30) compared to harsh-judgment revealers (M = 1.00, SD = 2.18), $t(147) = 2.80$, $p = .006$, 95% $CI_{difference}$ = [0.33, 1.91], $d = 0.56$, and expected recipients to experience more positive moods (M = 1.76, SD = 1.46) compared to harsh-judgment revealers (M = 0.62, SD = 2.02), $t(147) = 2.85$, $p = .005$, 95% $CI_{difference}$ = [0.35, 1.93], $d = 0.57$.

Revealers' expectations in the control condition were generally similar to those in the harsh-judgment condition, suggesting that participants spontaneously expected to be judged harshly after revealing their secret. Specifically, control revealers ($M_{difference}$ = -2.40, $SD_{difference}$ = 2.93) predicted more negative changes in perceived honesty compared to mild-judgment revealers, $t(147) = 2.80$, $p = .006$, 95% $CI_{difference}$ = [0.42, 2.42], $d = 0.56$, predicted more negative changes in perceived trustworthiness ($M_{difference}$ = -2.02, $SD_{difference}$ = 2.97) compared to mild-judgment revealers, $t(147) = 2.32$, $p = .022$, 95% $CI_{difference}$ = [0.17, 2.11], $d = 0.46$, predicted more negative changes in impression ($M_{difference}$ = -1.54, $SD_{difference}$ = 2.37) compared to mild-judgment revealers, $t(147) = 2.91$, $p = .004$, 95% $CI_{difference}$ = [0.38, 2.02], $d = 0.58$, and predicted more negative changes in recipient mood from Time 1 to Time 2 ($M_{difference}$ = -1.74, $SD_{difference}$ = 2.70) compared to mild-judgment revealers, $t(147) = 2.55$, $p = .012$, 95% $CI_{difference}$ = [0.24, 1.92], $d = 0.51$. In contrast, control revealers and harsh-judgment revealers did not differ

significantly in predicted changes in honesty, $t(147) = 0.16$, $p = .875$, 95% $CI_{difference} = [-0.92, 1.08]$, $d = 0.03$, trustworthiness, $t(147) = -0.77$, $p = .441$, 95% $CI_{difference} = [-1.35, 0.59]$, $d = -0.15$, impressions, $t(147) = -0.48$, $p = .628$, 95% $CI_{difference} = [-1.02, 0.62]$, $d = -0.10$, or recipient mood, $t(147) = 0.14$, $p = .888$, 95% $CI_{difference} = [-0.78, 0.90]$, $d = 0.03$. Control participants spontaneously expected to be evaluated harshly upon revealing their secret.

Primary analyses. Revealers' decisions about concealing or revealing their secrets varied by condition, $\chi^2(2, N = 150) = 17.20$, $p < .001$. As predicted, planned contrasts revealed that a greater proportion of mild-judgment revealers (92%) chose to reveal their secret than either harsh-judgment revealers (76%), $Z = 2.18$, $p = .029$, 95% $CI_{difference} = [1.63\%, 30.37\%]$, or control revealers (56%), $Z = 4.10$, $p < .001$, 95% $CI_{difference} = [18.81\%, 53.19\%]$. Interestingly, a greater proportion of harsh-judgment revealers (76%) shared the secret than control revealers (56%), $Z = 2.11$, $p = .035$, 95% $CI_{difference} = [1.43\%, 38.57\%]$. I did not anticipate this result, and further research would be needed to test both its robustness and its cause. For now, it simply suggests that there may be other mechanisms besides expected judgment from recipients that guide willingness to reveal a negative secret.

Across all conditions, revealers' choice to reveal their secret was positively correlated with how they expected to be judged by the recipient in terms of honesty, $r = .23$, $t(128) = 2.84$, $p = .005$, 95% CI = [.07, .37], trustworthiness, $r = .19$, $t(148) = 2.38$, $p = .018$, 95% CI = [.03, .34], overall impression, $r = .28$, $t(148) = 3.61$, $p < .001$, 95% CI = [.13, .43], and mood, $r = .19$, $t(148) = 2.40$, $p = .018$, 95% CI = [.03, .34]. Likewise, revealers' choice to reveal the secret was positively correlated with predicted changes in honesty, $r = .20$, $t(148) = 2.48$, $p = .014$, 95% CI = [.04, .35], trustworthiness, $r = .17$, $t(148) = 2.09$, $p = .038$, 95% CI = [.009, .32], impression

change, $r = .29$, $t(148) = 3.67$, $p < .001$, 95% CI = [.13, .43], and recipient mood, $r = .16$, $t(148) = 1.96$, $p = .052$, 95% CI = [-.002, .31].

I also examined these correlations within each condition separately for exploratory purposes. In the control condition, the choice to reveal the secret was significantly correlated with expected judgments of honesty, $r = .28$, $t(48) = 2.02$, $p = .049$, 95% CI = [.002, .52], and overall impression, $r = .35$, $t(48) = 2.60$, $p = .012$, 95% CI = [.08, .57], and marginally significantly with trustworthiness, $r = .25$, $t(48) = 1.81$, $p = .077$, 95% CI = [-.03, .50], and mood, $r = .25$, $t(48) = 1.80$, $p = .078$, 95% CI = [-.03, .50]. The choice to reveal the secret did not correlate significantly with predicted changes in honesty, $r = .23$, $t(48) = 1.60$, $p = .116$, 95% CI = [-.06, .47], trustworthiness, $r = .19$, $t(48) = 1.31$, $p = .196$, 95% CI = [-.10, .44], or recipient mood, $r = .19$, $t(48) = 1.35$, $p = .182$, 95% CI = [-.09, .45]. It did, however, correlate positively with predicted changes in the recipient's overall impression, $r = .31$, $t(48) = 2.27$, $p = .028$, 95% CI = [.04, .54]. In the harsh- and mild-judgment conditions, the correlations with predicted Time 2 evaluations were generally positive, but smaller and statistically nonsignificant, $-.01 \leq rs \leq .17$, $ts(48) \leq 1.22$, $ps \geq .227$, and the correlations with predicted changes in evaluation were also generally positive but nonsignificant, $-.05 \leq rs \leq .25$, $ts(48) \leq 1.75$, $ps \geq .086$. These weaker correlations in the harsh- and mild-judgment conditions are difficult to interpret given the range restrictions that come from a significantly higher percentage of participants choosing to reveal their secrets in these conditions (76% and 92%, respectively).

Discussion

The results of Experiment 14 were consistent with my predictions. Those who learned—correctly based on the prior experiments—that people tend to judge others fairly mildly after revealing a negative secret were significantly more likely to reveal that they had lied to their

partner than those who were told—incorrectly based on the prior experiments—that people tend to judge others harshly for revealing negative secrets. Experiment 14 thus provides further support for a critical component of the expectancy-value theory: People's social judgments guide their engagement decisions. Calibrating people's expectancies of others' responses therefore leads people to be more social toward others.

One unexpected finding from Experiment 14 warrants further discussion. In particular, revealers who were told nothing about a recipient's likely impression were less willing to reveal their secret than those told that they would be judged harshly, even though these two groups did not differ in their expectations of how negatively they would be judged by recipients. This is potentially consistent with a tendency for people to evaluate risky choices more negatively than their worst possible realized outcome (Gneezy, List, & Wu, 2006). Consistent with this possibility, control revealers exhibited significantly greater variance in predicted honesty, $F(1, 148) = 5.27$, $p = .023$, trustworthiness, $F(1, 148) = 5.77$, $p = .018$, and recipient mood, $F(1, 148) = 6.63$, $p = .011$, at Time 2 compared to mild- and harsh-judgment revealers combined, as well as marginally greater variance in predicted impression at Time 2, $F(1, 148) = 3.32$, $p = .070$.

It is unclear how robust this result is likely to be, as Experiments 3a-5 provided only mixed evidence that uncertainty about others creates a barrier to socially engaging independent of people's expectations. At minimum, this finding suggests that other mechanisms besides expected judgment guided revealers' willingness to reveal the secret in this experiment.

General Discussion

The findings of these experiments suggest that calibrating people's expectancies of others' responses leads them to be more social. Participants who imagined that another person would be relatively caring and interested chose deeper questions for conversation than those who

imagined the person that the person would be relatively uncaring (Experiments 13a-b). Participants who expected their conversation partner to be relatively forgiving were likewise more likely to reveal a negative secret compared to those who expected their partner to be relatively unforgiving (Experiment 14).

These findings have two important implications. First, consistent with the expectancy-value theory, people's expectancies of others' responses guide their social engagement decisions. Second, these findings suggest that people's miscalibrated expectancies may lead them to be less social than would be ideal for their own well-being. People's health and happiness are closely tied to the quality of their social relationships (Baumeister & Leary, 1995; Diener & Seligman, 2002). Expecting others to be less social than others are, and expecting others to care less about the warmth of one's actions than others do, may keep people from engaging with others in positive ways that could strengthen these social relationships.

Chapter 6: General Discussion

Connecting with others and building meaningful relationships enhances one's health and happiness (Baumeister & Leary, 1995; Holt-Lunstad, 2018), and yet people often remain socially disengaged because they expect their interactions to unfold less positively than they do (e.g., Bohns, 2016; Epley & Schroeder, 2014; Kardas, Kumar, & Epley, 2020a; Kardas, Kumar, & Epley, 2020b; Kardas, Schroeder, & O'Brien, 2020; Levine & Cohen, 2018; Zhao & Epley, 2020). The current dissertation proposes, and tests, an expectancy-value theory describing the psychological processes that cause people to mismanage their social relationships. The theory predicts that people will be highly interested in socially engaging when they both perceive a specific outcome to be highly likely (high expectancy) and expect to attach high value to this outcome (high value). People should therefore mismanage their social relationships when their expectancies of specific outcomes are miscalibrated.

Fourteen experiments support key predictions of the theory and document three reasons why people's expectancies are miscalibrated. First, people tend to underestimate how social others are (Experiments 1, 9, 10), leading them to expect deep conversations with distant strangers to feel more awkward and less enjoyable than they do. Second, people expect others to care less about the warmth of one's actions than others do (Experiments 11-12), causing them to expect negative self-disclosures to be more costly to one's reputation than these disclosures are. Third, people overlook the communication medium of the interaction (Experiments 6-8b), leading people to underestimate how much common ground they would establish with others through interactive media that entail dialogue. People's expectancies guide their social engagement decisions (Experiments 2a-5), and so these miscalibrated expectancies create a

psychological barrier to engaging. Calibrating people's expectancies therefore removes this barrier and causes people to be more social (Experiments 13a-14).

One open question concerns the scope of the theory in daily life. The expectancy-value theory describes the psychological processes through which people make deliberate choices to engage with others, and these choices comprise an unknown proportion of people's social interactions. Future research should examine how often people's interactions arise from thoughtful decisions to engage as opposed to automatic responses to others (Bargh & Ferguson, 2000) or chance encounters based on proximity or convenience (Glaeser & Sacerdote, 2000; Godley, 2008). Future research should also examine whether remaining disengaged from others creates a habit of mindlessness (Langer & Piper, 1987), leading people to perceive fewer opportunities to engage with others than they actually encounter. Prompting people to mindfully attend to others in daily life might lead them to be more social—thus helping to calibrate their expectations—by causing them to perceive social engagement opportunities that they would otherwise overlook.

Another question concerns why people expect distant others to be less social and caring during social interaction than they are. Existing evidence suggests that people underestimate how social distant others *are*: People tend to observe how socially others behave and infer that these behaviors correspond to their underlying dispositions (Gilbert & Malone, 1995). Therefore, in contexts that constrain others' social behavior, people tend to (falsely) assume that they are more interested in engaging with others than others are in engaging with them (Epley & Schroeder, 2014; Shelton & Richeson, 2005; Vorauer & Ratner, 1996). But people may also underestimate how social distant others *can* be. Reaching out to another person may act as a powerful stimulus that leads the person to take interest in the content of the interaction. People may overlook their

ability to trigger others' sociality by engaging with them, and this may help to explain why people expect their interactions with distant others to unfold less positively than they do.

Future research should examine cultural variability in the extent to which people have calibrated beliefs about engaging with others. Members of collectivistic cultures tend to engage with distant others less often compared to members of individualistic cultures (Conway, Ryder, Tweed, & Sokol, 2001; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988), and these decisions to avoid others should prevent people from receiving informative feedback about the outcomes of engaging (Eiser & Fazio, 2013; Epley & Schroeder, 2014; Hogarth, Lejarraga, & Soyer, 2015; Zelenski et al., 2013). Members of collectivistic cultures may therefore be especially likely to underestimate the benefits of engaging with distant others (Epley & Schroeder, 2014) or engaging in meaningful ways that show one's vulnerabilities (Bruk, Scholl, & Bless, 2018; Kardas, Kumar, & Epley, 2020a; Schug, Yuki, & Maddux, 2010). In this way, cultural differences in social behavior may owe to differences in people's expectations about the consequences of engaging more so than their actual experiences (see also Bohns et al., 2011).

Finally, future research should test whether people have different patterns of miscalibrated expectations in interpersonal versus intergroup settings. Interpersonal interactions—including exchanges between members of different ethnic, religious, or political groups—take place between individuals. Being *social* during an interpersonal interaction entails finding common ground and establishing a social bond with another person. Thus, underestimating others' sociality should lead people to expect others to be less friendly than others actually are (Kardas & Epley, 2020; Mallett, Wilson, & Gilbert, 2008). In contrast, intergroup interactions take place between groups of highly interconnected individuals. Being social during an intergroup interaction entails defending the interests of one's ingroup members

(Waytz, Young, & Ginges, 2014). When the interests of two groups diverge, underestimating others' sociality should therefore lead people to expect members of the outgroup to be less *hostile* than others actually are. Whereas interpersonal interactions may be surprisingly friendly, intergroup interactions may be surprisingly divisive.

Conclusion

People who feel socially connected tend to be happier and healthier than those who feel socially isolated (Baumeister & Leary, 1995; Holt-Lunstad, 2018), and yet people commonly mismanage their social relationships in ways that reduce their well-being. This dissertation proposes that people mismanage their relationships because three psychological tendencies cause people to form miscalibrated expectations about how their social interactions are likely to unfold. Specifically, people expect distant strangers to be less social than they are, expect others to care less about the warmth of one's actions than others do, and focus too little on the communication medium of an interaction when predicting the outcomes of the interaction. People's expectations about the consequences of engaging guide their social engagement decisions, and so these misunderstandings may cause people to be less social than would be ideal for their own and others' well-being.

Appendix A: Conversation Topics (Exp. 7)

1. The policies of the Democratic Party
2. The policies of the Republican Party
3. Reproductive rights including protecting legal abortion
4. Black Lives Matter movement for racial equality
5. Passing stricter gun-control legislation
6. Enforcing the death penalty for capital offenses
7. Affirmative action for women and minority students
8. Funding tuition-free college by raising taxes
9. Requiring police officers to wear body cameras
10. #MeToo movement against sexual harassment and assault
11. Family separation policy at the US-Mexico border
12. Allowing GMO foods to be bought and sold for consumption
13. Allowing manufacturers to sell self-driving cars to the public
14. Legalizing same-sex marriage throughout the US
15. Legalizing euthanasia throughout the US
16. Legalizing sports betting throughout the US
17. Building a US-Mexico border wall
18. Repealing the Affordable Care Act ("Obamacare")
19. Revelation of classified and sensitive information by WikiLeaks
20. Deciding Presidential elections through the Electoral College
21. US withdrawal from the Paris Climate Agreement
22. Standardizing K-12 education through the Common Core
23. President Donald Trump's political viewpoints
24. Reducing funding for Planned Parenthood
25. Limiting American Presidents to two four-year terms
26. Implementing stricter regulations on the financial industry
27. Raising taxes on the wealthy
28. Allowing invited speakers with any ideological viewpoints to speak on college campuses

Appendix B: Revealer Scenarios (Exp. 12)

Negative secret. You live with several roommates, including your friend X. You are generally a very responsible person and you think about the consequences of your actions before you act, especially when your actions may affect other people. But last month you snuck food out of X's cabinets almost every night without telling him/her. You did this to save money because you were out of work and money was very tight at the time. X noticed that food was missing but did not discover who was responsible for the missing food. The missing food caused financial as well as emotional strain for X, who was required to spend extra money on groceries. Now you're back in work and you're able to buy your own food, but you still have not revealed to X that you were responsible for sneaking food out of the cabinet. You very much regret taking food from the cabinets and you feel remorseful toward X for behaving selfishly last month.

Positive secret. You live with several roommates, including your friend X. You are generally a very responsible person and you think about the consequences of your actions before you act, especially when your actions may affect other people. And so last month you replenished X's cabinets with food almost every night without telling him/her. You did this to help X save money because X was out of work and money was very tight at the time. X noticed that the cabinets were being replenished but did not discover who was responsible for the additional food. The additional food reduced financial as well as emotional strain for X, who no longer needed to spend as much money on groceries. Now X is back in work and is able to buy his/her own food, but you still have not revealed to X that you were responsible for replenishing the cabinets with food. You do not at all regret replenishing the cabinets and feel happy to have behaved kindly toward X last month.

Appendix C: Intimacy Ratings by Question (Exps. 13a-b)

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.

Appendix D: Summary of Experiments by Chapter

	Experiment	*Primary Results*
Chapter 2 (*Whether* to engage)	Exp. 1 (Perceived vs. actual sociality)	People underestimate distant strangers' sociality more than close others' sociality or one's own.
	Exps. 2a-b (Expectancy × Value)	People are especially likely to engage when the expectancy *and* value of an outcome are high. The relation between expectancy and value is multiplicative.
	Exps. 3a-c (Uncertainty)	People report being less likely to engage when they are uncertain of the person's interest than when the other person maintains a neutral expression.
	Exp. 4-5 (Uncertainty)	People report being as likely to engage when they are uncertain of the person's interest as when the other person maintains a neutral expression.
Chapter 3 (*How* to engage)	Exps. 6-7 (Monologue vs. dialogue)	People underestimate how much common ground they will establish with another person for dialogue more than monologue (Exp. 6). This pattern is especially pronounced in cases of disagreement (vs. agreement; Exp. 7).
	Exps. 8a-8b (Monologue vs. dialogue)	People report greater common ground after both responding to the transcript of another person's response *and* answering the prompt than after simply answering the prompt (Exps. 8a-b). However, people expect similar amounts of common ground in either condition (Exp. 8b).
Chapter 4 (*What* to talk about)	Exps. 9-10 (Deep talk)	People underestimate feelings of enjoyment, connectedness, and happiness for typical and deeper conversations, but are especially likely to overestimate awkwardness for deeper conversations (Exps. 9-10). These patterns are especially pronounced for distant strangers (vs. close others; Exp. 10).
	Exp. 11 (Secret revelation)	People overestimate how negatively others would judge them upon revealing a negative secret.
	Exp. 12 (Secret revelation)	People are more likely to overestimate the reputational costs of revealing a negative (vs. positive) secret.
Chapter 5 (Calibrating Judgment)	Exps. 13a-b (Deep talk)	Calibrating people's expectations about others' sociality leads them to choose deeper conversation questions.
	Exp. 14 (Secret revelation)	Calibrating people's expectations about others' sociality leads them to be more likely to reveal a negative secret.

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