The Liking Gap in Conversations:

Do People Like Us More Than We Think?

Erica J. Boothby*

Cornell University

Gus Cooney*

Harvard University

Gillian M. Sandstrom

University of Essex

Margaret S. Clark

Yale University

RUNNING HEAD: The Liking Gap

CORRESPONDING AUTHOR: Erica J. Boothby, Department of Psychology, Cornell University, Ithaca, NY 14850, ericajboothby@gmail.com

*These authors contributed equally to this work.

Abstract

Having conversations with new people is an important and rewarding part of social life. Yet conversations can also be intimidating and anxiety provoking, and this makes people wonder and worry about what their conversation partners *really* think of them. Are people accurate in their estimates? We found that following interactions people systematically underestimated how much their conversation partners liked them and enjoyed their company, an illusion we call the *liking gap*. We observed the liking gap as strangers got acquainted in the laboratory, as first year college students got to know their dorm mates, and as formerly unacquainted members of the general public got to know each other during a personal development workshop. The liking gap persisted in conversations of varying lengths, and even lasted for several months as college dorm mates developed new relationships. Our studies suggest that after people have conversations, they are liked more than they know.

Having conversations with new people is a fundamental part of social life. It's how we meet new friends and romantic partners. It's how we ease into a new neighborhood or workplace. It's a basic way we learn about the world. But having conversations with new people is rarely easy.

One of the main difficulties is that it is hard for people to know what their conversation partners *really* think of them, leaving people uncertain about how much others like them, enjoy their company, and would like to interact again. Why? There are several reasons. First, conversations are conspiracies of politeness in which people do not reveal their true feelings (Blumberg, 1972; Brown & Levinson, 1987; Schegloff, Jefferson, & Sacks, 1977; Swann, Stein-Seroussi, & McNulty, 1992; Tesser & Rosen, 1975). Second, conversations raise the specter of social rejection, and so people are reluctant to express interest in others in case this interest is not reciprocated (Beck & Clark, 2010; Eisenberger, Lieberman, & Williams, 2003). Third, conversations are cognitively demanding, and so even when people do signal how much they like one another, their partners often fail to notice because they are too focused on themselves or too busy planning what to say next (Epley, Keysar, Van Boven, & Gilovich, 2004; Keysar, 2007; Lieberman & Rosenthal, 2001). In short, the natural dynamics of conversation can make it hard for people to know how much others like them and, as a result, conversations are often marked by awkwardness and uncertainty (e.g., "Did I overstep my bounds?" "Did I talk too much?" "Did they think I was boring?").

Short of actually knowing how much others like them, people are left to venture their best guess, but people's best guesses tend to be biased (Kenny & DePaulo, 1993). Specifically, people are often biased by their own internal monologues, which, after social interactions, can be remarkably self-critical and negative, especially with the added uncertainty of talking to

someone new (Brozovich & Heimberg, 2008; Mor & Winquist, 2002; Schlenker & Leary, 1982). Uncertainty and worries about how one has come across are familiar feelings to anyone who has been involved in a conversation—afterwards people tend to compare themselves unfavorably to their ideal version of themselves (e.g., "My banter wasn't witty enough"), ruminate about the worst possible outcomes (e.g., "Does she think I'm a bigot?"), and focus on the things they need to fix for next time (e.g., "I really shouldn't talk about my ex so much."). In short, people can be their own greatest critic, but what is hard for people to see is that others do not have this same perspective on their faults. This discrepancy in perspectives causes people to overestimate how harshly others will judge them during social interactions (Savitsky, Epley, & Gilovich, 2001; Savitsky & Gilovich, 2003).

This amounts to the following. First, successful conversations require that people know how much others like them and enjoy their company. Second, the dynamics of conversation prevent people from knowing this. Third, left with few alternatives, people estimate how much others like them by assuming others' thoughts about them are the same as their own thoughts about themselves. But this is problematic because people's own thoughts tend to be overly critical. Taken together, these facts suggest that when people have conversations with new people, they will systematically underestimate how much others like them.

We call this mistaken belief the *liking gap*, and we explore it across five studies. In Study 1a, we test the hypothesis that after a short conversation, people will underestimate how much others like them. Studies 1b and 2 provide evidence that the liking gap exists not because people fail to signal that they like each other—in fact, the signals are right there for people to see—but, rather, people are too focused on their own self-critical thoughts to notice. Studies 3 and 4 show the liking gap exists after short, medium, and long conversations, as well as among the general

public in a UK sample. Finally in Study 5 we track college dorm mates over the course of an academic year, finding that they too show sustained evidence of the liking gap. Together, these studies suggest that after people have conversations, they chronically underestimate how much their conversation partners like them and enjoy their company.

STUDY 1A: IS THERE A LIKING GAP?

Method

Purpose

As an initial test of our hypothesis, we used a straightforward methodology: we recruited two people to have a conversation. Then, after they were finished, we asked them how much they liked one another and how much they believed the other person liked them.

Participants

We began data collection part way through a summer term, and because the predicted effect had not previously been demonstrated, we decided to collect as many participants as we could before the end of the summer term, with plans to replicate the effect, if it emerged, in further studies. We recruited community members of all ages using fliers posted on and near Yale University's campus. Thirty-six people (72.2% female, M_{age} = 23.25 years, SD = 6.12 years) reported to our lab and participated in exchange for $10.00.

Procedure

Each session involved two same-sex participants. After arriving at the laboratory, participants were greeted by an experimenter and escorted to the study room where they sat side by side at a large table. Participants were instructed to have a conversation for approximately five mins. To aid conversations, participants were given a sheet of ice-breaker questions (e.g.,

"Where are you from?" "What are some of your hobbies?" etc.), and were told to take turns asking each other questions until the experimenter returned. A computer running an analog clock program was left on the table to ostensibly help the participants pace themselves. In reality, the computer was recording participants' conversations.

After five mins, the experimenter returned and participants ended their conversation. Participants were then escorted to separate rooms where they completed a computer-based survey. Participants were asked to answer four questions to measure how much they liked their conversation partners (measures A through D), and an analogous four questions to measure how much they thought their conversation partners liked them (measures E through H). Participants used 7-point Likert scales whose endpoints were labeled *strongly disagree* and *strongly agree* to report the extent to which they agreed with the following statements: (a) "I generally liked the other participant."; (b) "I would be interested in getting to know the other participant better."; (c) "If given the chance, I would like to interact with the other participant again."; (d) "I could see myself becoming friends with the other participant."; (e) "The other participant generally liked me."; (f) "The other participant would be interested in getting to know me better."; (g) "If given the chance, the other participant would like to interact with me again."; (h) "The other participant could see himself/herself becoming friends with me."

Participants also completed personality scales measuring narcissism (Ames, Rose, & Anderson, 2006), shyness (McCroskey Andersen, Richmond, & Wheeless, 1981), rejection sensitivity (Berenson et al., 2009) and self-esteem (Rosenberg, 1965). After responding to these measures and some exploratory questions, participants reported their demographics, were debriefed, and dismissed. The exploratory questions and demographics questions for this and all subsequent studies are available in the supplementary materials.

Results

Did participants know how much their conversation partners liked them? Our four measures of how much participants liked their conversation partners (measures A through D) were highly correlated ($\alpha = .88$), and so we averaged participants' scores on these measures into a single measure of *actual liking*. Likewise, our four measures of how much participants thought that their conversation partners liked them (measures E through H) were also highly correlated ($\alpha = .89$), and so we averaged scores on these measures to form a single measure of *perceived liking*. These measures, collectively referred to as a *liking index,* served as our primary dependent variable.

Because the two types of ratings were nested within participants and participants were nested within dyads, we fit a mixed linear model to the data in R using the lme4 package (Bates, Maechler, & Bolker, 2016) with rating type (actual or perceived) as the independent variable, and our liking index as the dependent variable. Our model included our independent variable as a fixed effect, and an intercept for each participant as well as an intercept for each dyad as random effects. We used the lmerTest package (Kuznetsova, Brockhoff, & Christensen, 2014) to derive p values and degrees of freedom (for this study and all subsequent studies). Note that the reported means are predicted marginal means (for this study and all subsequent studies).

Data from one dyad were excluded from analyses because the participants turned out to be close friends. The analysis revealed a significant effect of rating type on liking, $b = -0.65$, $SE = 0.11$, $t(34) = -5.83$, $p < .001$, 95% CI [-0.87, -0.42], with participants reporting liking their conversation partner ($M_{actual} = 5.82$, 95% CI [5.49, 6.14]) significantly more than they perceived their conversation partner to like them ($M_{perceived} = 5.17$, 95% CI [4.85, 5.49]). But since it cannot logically be true that participants, on average, liked their conversation partners more than their

conversation partners liked them, it follows that the significant difference between actual liking and perceived liking is a mistake on the part of participants. This mistake is the hypothesized liking gap.

In sum, as the left panel of Figure 1 shows, after a brief conversation with another person, people significantly underestimated how much others liked them. In short, Study 1a provided the predicted evidence of the liking gap.

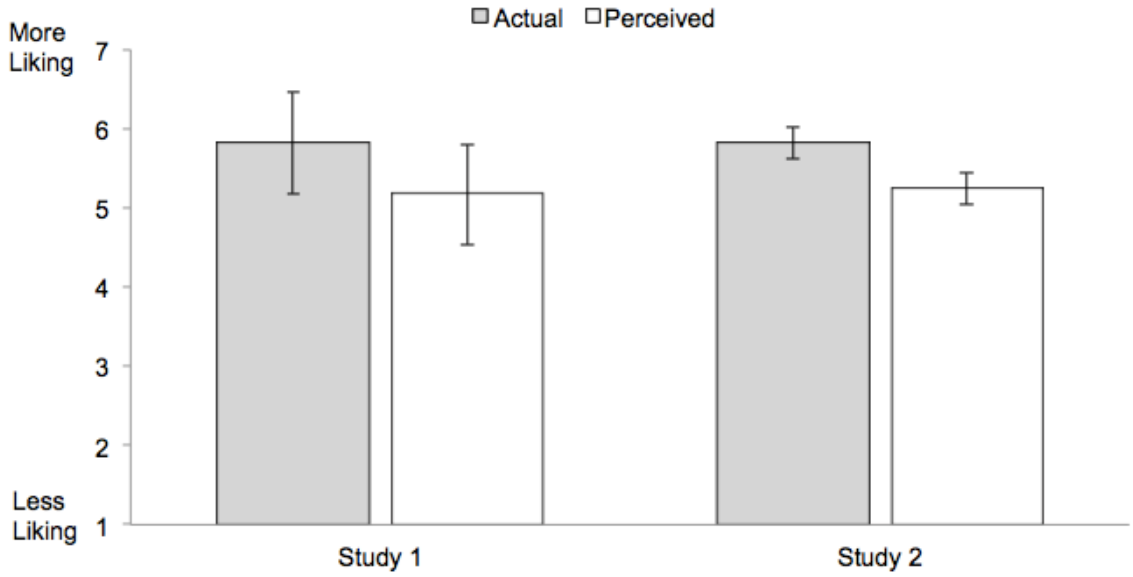

Figure 1. Results of Study 1 and Study 2: mean of actual and perceived liking of conversation partners. Error bars show the 95% confidence intervals around the means.

Personality Moderators. Tests of the four potential moderators were conducted; a Holm-Bonferroni procedure was used to correct for multiple comparisons. Because we started collecting data on shyness after the study had begun, the following analyses exclude data on that measure from two dyads. We found a significant shyness x rating type (actual or perceived)

interaction, $b = 0.03$, $t(30) = 3.29$, $p = .003$, 95% CI [0.01, 0.04]. The shyer participants were, the greater their liking gap was. Rejection sensitivity ($p = .64$), self-esteem ($p = .42$), and narcissism ($p = .12$) did not moderate the size of the liking gap.

Shyness. To further explore the effects of shyness on the liking gap, we grouped participants into three levels of shyness: low shyness (1st tertile of shyness, $n = 10$), average shyness (2nd tertile of shyness, $n = 10$), and high shyness (3rd tertile of shyness, $n = 10$). We then fit a mixed linear model to the data with rating type (actual or perceived) as the independent variable, and liking as the dependent variable. We included shyness (treated as a factor) as a fixed effect to explore its effect on participants' liking. Our model included an intercept for each participant as well as an intercept for each dyad as random effects. Finally, we conducted a series of post-estimation contrasts to fully explore how Shyness moderates the liking gap.

Our analyses revealed that participants who were high in shyness liked their partners ($M_{actual} = 6.16$, 95% CI [5.63, 6.69]) significantly more than they thought their partners liked them ($M_{perceived} = 5.02$, 95% CI [4.53, 5.51]), $t(27.56) = 5.71$, $p < .001$, estimated mean difference = 1.14, 95% CI [0.73, 1.55]. Participants who were average in shyness liked their partners ($M_{actual} = 5.67$, 95% CI [5.16, 6.17]) significantly more than they thought their partners liked them ($M_{perceived} = 5.12$, 95% CI [4.57, 5.67), $t(27.54) = 2.76$, $p = .01$, estimated mean difference = 0.55, 95% CI [0.14, 0.96]. Lastly, participants who were low in shyness did not like their partners ($M_{actual} = 5.57$, 95% CI [5.03, 6.11]) significantly more than they thought their partners liked them ($M_{perceived} = 5.32$, 95% CI [4.78, 5.86]), $t(26.42) = 1.30$, $p = .21$, estimated mean difference = 0.25 95% CI [-0.15, 0.65].

In sum, shyness moderated the liking gap such that participants low in shyness did not report a liking gap, while participants high in shyness reported a large liking gap. Note, however,

that even participants who were of average shyness reported a significant liking gap. It is also worth noting how the preceding analysis of shyness speaks against an alternative interpretation of our findings. Specifically, it is possible that what we have shown is not a liking gap, but rather a reporting gap. In other words, perhaps participants did not really believe that their conversation partners liked them less, but simply said so to appear more modest or humble. However, the significant moderating effect of a personality factor (i.e., shyness) is evidence against this interpretation.

STUDY 1B: DO PEOPLE SEND SIGNALS THAT THEY LIKE EACH OTHER?

Method

Purpose

Why did people in Study 1a underestimate how much their conversation partners liked them? One explanation is that when people have conversations, they do not outwardly exhibit as much liking of each other as they internally feel. In other words, maybe people cannot tell how much their conversation partners like them because their conversation partners do not signal that they like them. We refer to this as the *no-signal* account. However, another explanation is that people signal plenty of interest in each other during conversations, but their partners don't notice or use these signals. We call this the *neglected-signal* account. If the *no-signal* account is correct, then third party observers of the conversation should not be able to tell how much conversation partners like each other. However, if the *neglected-signal* account is correct, then third party observers should be able to tell how much conversation partners like each other. Which account is correct?

To answer this question, we had trained coders watch the videotapes of the conversations from Study 1 and report how much they thought people liked one another.

Procedure

All dyads from Study 1 had consented to let us keep their videos for research purposes. Technical difficulties prevented two videos from recording properly, and one video was not coded because the participants turned out to be close friends, leaving us with 15 videos for coding.

Two trained research assistants, who were unaware of the hypothesis, independently coded the videotaped conversations for how much conversation partners liked one another. The coders separately watched each video twice in a random order and answered the following questions about each participant: "How much does he/she like the other person?" "How much would he/she like to interact with the other participant again?" "How interested is he/she in getting to know the other participant?" "How much is he/she interested in becoming friends with the other person?" All questions were answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very/very much.* We averaged each coder's responses to these four questions to create a composite for each coder (α's > .87), for each participant in the dyad. Coders' ratings were reliable (ICC = .71), so we averaged across coders to create an *observed liking index* for each participant in each dyad.

Results

We fit two mixed linear models to test whether coders' *observed liking index* predicted participants' *actual liking* and/or participants' *perceived liking*. Both models included *observed liking* as the independent variable, and an intercept for each dyad as a random effect.

Actual Liking. The analysis revealed that *observed liking* was a significant predictor of *actual liking*, $b = 0.71$, $SE = 0.22$, $t(30) = 3.20$, $p < .001$, 95% CI [0.26, 1.16]. Coders who watched the videos of participants' conversations could and did predict how much participants actually reported liking one another.

Perceived Liking. The analysis revealed that *observed liking* (coders' judgments of how much participants liked their conversation partners) was not a significant predictor of *perceived liking* (participants' estimates of how much their conversation partners liked them), $b = 0.38$, $SE = 0.26$, $t(21.13) = 1.48$, $p = .51$, 95% CI [-0.17, 0.91].

In sum, coders could reliably predict people's *actual* liking of their conversation partners, but coders' ratings did not correspond to how much people *perceived* that their conversation partners liked them. This pattern of results is inconsistent with the no-signal account, and consistent with the neglected-signal account – participants did signal that they liked one another, but participants neglected this information when estimating how much their conversation partners liked them.

Given this evidence in support of the neglected-signal account, it follows that the explanation for the liking gap lies in processes occurring within the perceivers' own heads that are distracting them from realizing how much their conversation partners really like them. But can we find more direct evidence for this? Moreover, if participants are ignoring the signals that their conversation partners like them, what exactly are they focused on instead?

STUDY 2: WHY DOES THE LIKING GAP EXIST?

Method

Purpose

Study 1b supported the *neglected-signal* account, which suggests that although people do signal that they like one another during conversations, people neglect these signals when estimating how much others like them. Why? We think one major reason is that people are overly focused on the contents of their own thoughts which are largely critical of their own conversation performance, and these thoughts distract them from perceiving how much their conversation partners like them. If this is correct, then the extent to which people's thoughts are critical of their own conversational performance will be positively related to the size of the liking gap. We tested this prediction in Study 2.

To test this prediction, we made two changes to the methods used in Study 1a. First, to assess the contents of people's post-conversation thoughts, we simply asked people to report the most salient thoughts they had about their conversation partner, as well as the most salient thoughts they believed their conversation partner had about them. Second, rather than using ice-breaker questions to guide the conversation, we allowed people to talk about whatever they wanted; this allowed the conversations to unfold more naturally.

Participants

We pre-specified a target sample of at least double the size from Study 1 and ran the study from the start of the spring semester until the end. Eighty-four people (59.5% female; M_{age} = 19.25 years, *SD* = 1.28) students and recent graduates of Yale University reported to our lab and participated in exchange for $10.00.

Procedure

The procedure was identical to Study 1a, except that instead of being given ice-breaker questions, participants were given the following instructions: "You'll have about five minutes to

talk, and you can talk about whatever you like. I'll keep time from the other room and then return when it's time to move on."

After answering the questions about how much they liked their conversation partners, and about how much they thought their conversation partners liked them, participants were asked what thoughts went into forming their impression of the other participant (Measure A: "What are the top 3 moments from your conversation that caused you to form the impression of the other person that you did?") Participants also were asked what thoughts they believed went into forming the other participant's impression of them (Measure B: "What are the top 3 moments from your conversation that caused the other person to form the impression of you that he/she did?") Participants were instructed to write in detail about each moment, and then to rate the negativity or positivity of each moment on a 7-point Likert scale whose endpoints were labeled *extremely negative* and *extremely positive*. After completing several exploratory questions (see supplementary materials), participants reported their demographics, and were debriefed and dismissed.

Results

Liking Gap. Just like in Study 1a, the four measures of how much participants liked their conversation partners were highly correlated ($\alpha = .85$), and the same was true for measures of how much participants thought their conversation partner liked them ($\alpha = .89$), and collectively this *liking index* serves as our primary dependent variable.

We fit a mixed linear model to the data with rating type (actual or perceived) as the independent variable, and our liking index as the dependent variable. Our model included our independent variable as a fixed effect, and an intercept for each participant as well as an intercept for each dyad as random effects.

Just as in Study 1, the analysis revealed that rating type was a significant predictor of liking, b = -0.57 SE = 0.07, $t(84)$ = -8.32, $p < .001$, 95% CI [-0.71, -0.44]. As the right panel of Figure 1 shows, after having a conversation, people underestimated how much others liked them.

The Role of Negative Thoughts in the Liking Gap. People clearly underestimate how much others like them. But why? One explanation is that after people have conversations their thoughts tend to be critical of their own social performance, and they then project these thoughts onto others and have doubts about how much others like them. Our data allowed us to test this reasoning directly. We measured the valence of people's thoughts by having participants report the most salient thoughts they had about their conversation partner (measure A), as well as the most salient thoughts they imagined their conversation partner had about them (measure B). We then had participants report how negative or positive each of their thoughts were, and we averaged the valence of the thoughts into a *thought valence index*. This allowed us to test whether the negativity of people's post-conversation thoughts was related to the size of the liking gap.

Did the negativity of people's thoughts mediate the relationship between rating type (actual or perceived) and liking? To find out, we fit three mixed linear models: (a) M (thought valence) ~ X (rating type); (b) Y (liking index) ~ M (thought valence) + X (rating type); and (c) Y (liking index) ~ X (rating type). All models included an intercept for each participant and an intercept for each dyad as random effects. We extracted the relevant coefficients and bootstrapped an estimate of the indirect effect using the boot package in R (Canty & Ripley, 2016).

As shown in Figure 2, the indirect effect of rating type on liking through thought valence was significant (b = -0.14, SE = 0.06, 95% CI [-0.22, -0.07], $p < .05$). When participants

reflected on their conversations, their most salient thoughts about how others viewed them were more negative than their most salient thoughts about how they viewed others, and this difference was related to how much they believed their conversation partners liked them.

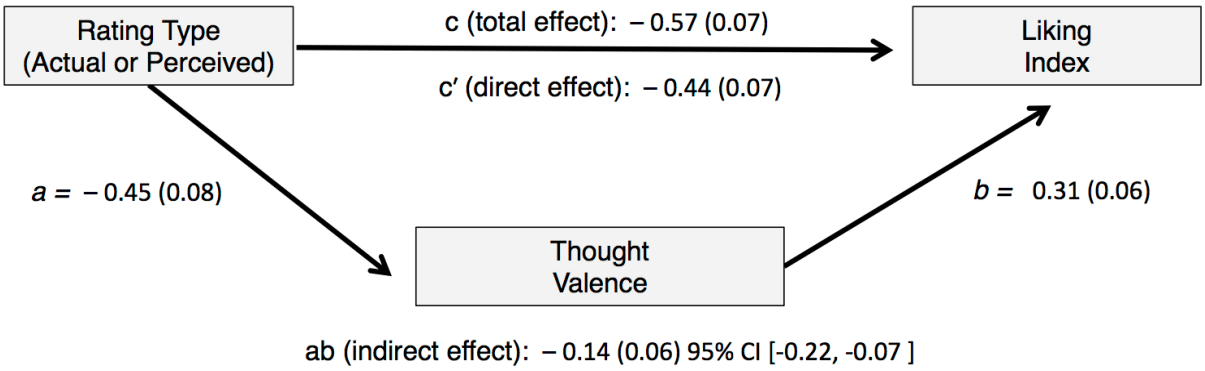

Figure 2. Mediation diagram for Study 2: thought valence as a mediator of the relationship between rating type (actual or perceived) and how much participants liked one another after their conversation.

STUDY 3: DOES THE LIKING GAP PERSIST IN LONGER CONVERSATIONS?

Method

Purpose

Does the liking gap generalize to longer conversations? To find out, we recruited people to have conversations and let them talk for as long as they wanted. We also broadened our sample to include mixed-gender conversations. Lastly, in addition to measuring how much people liked one another, we also measured how much people enjoyed the conversation and how much people thought others enjoyed the conversation to measure a natural extension of the liking

gap: do people believe that they enjoyed conversations more than their conversation partners did?

Participants

Participants were recruited as part of a study on conversation whose primary purpose was to look at the factors that predict the length of conversations. As such, the sample size was determined by that study's primary aims. One hundred and two people (52.9% female; M_{age} = 23.62 years, SD = 3.11) recruited via the Harvard Decision Science Laboratory subject pool (consisting of students and the general public alike) reported to the laboratory in exchange for $15.00.

Procedure

Each session involved two previously unacquainted participants. After arriving at the laboratory, they were greeted by an experimenter and escorted to the study room where they sat face-to-face at a small table. Participants were given the following instructions:

"We're interested in how people have conversations. In the first part of this study, you'll have a conversation with each other, and in the second part you'll answer some questions on computers in one of the rooms across the hall. If there is time remaining after that, you may complete some additional tasks, so you will participate for the full hour regardless of how long you choose to talk in the first part of the study. Your conversation will be recorded, and the recording will only be used for research purposes.

Now, please talk about whatever you like, for as little time or as much time as you like, as long as it is more than one minute and less than 45 minutes. Whenever you're ready to move on to the next part of the study, please come get me. I'll be across the hall. Thanks!" The total amount of time participants spent talking was recorded.

After participants' conversations were finished, participants retrieved the experimenter and then that experimenter escorted the two participants to separate cubicles where they each, independently, completed a computer-based survey. As noted, because the primary purpose of this study was about a different aspect of conversation (i.e., what determines the length of conversations), most measures were also unrelated to the liking gap (see supplementary materials). Yet for the present purposes, participants answered the following four questions related to the liking gap: (a) "How much do you generally like the other person?"; (b) "How much did you enjoy the conversation."; (c) "How much do you think the other person generally likes you?"; (d) "How much do you think your partner enjoyed the conversation?" Participants answered measures (a) and (c) on a 7-point Likert scale whose endpoints were labeled *not very much* and *very much.* Participants answered measures (b) and (d) on a 7-point Likert scale whose endpoints were labeled *did not enjoy at all* and *enjoyed very much.*

Participants reported their demographics, were debriefed, and dismissed.

Results

We fit a mixed linear model to the data with rating type (actual or perceived) as the independent variable, and liking as the dependent variable. Our model included the independent variable as a fixed effect, and an intercept for each participant as well as an intercept for each dyad as random effects. We also fit an analogous model with enjoyment as the dependent variable. Lastly, we included conversation length (the total amount of time participants spent talking) as a fixed effect in both models to explore the effect of conversation length on participants' liking and enjoyment of the conversations. Overall, participants' conversations lasted anywhere from two to 45 minutes (M_{length} = 22.97 minutes, SD_{length} = 14.47 minutes).

Liking Gap. The analysis revealed that rating type (actual or perceived) was a significant predictor of liking, b = -0.38, SE = 0.10, $t(102)$ = -3.72, $p < .001$, 95% CI [-0.59, -0.18]. Once again, participants underestimated how much others liked them.

Next we turned to the question of whether there is also an enjoyment gap.

Enjoyment Gap. The analysis revealed that rating type was a significant predictor of enjoyment, b = -0.52, SE = 0.10, $t(102)$ = -5.42, $p < .001$, 95% CI [-0.71, -0.33]. It appears that there is an enjoyment gap as well: participants mistakenly believed that they enjoyed the conversation more than their conversation partners enjoyed the conversation.

In sum, participants underestimated how much others liked them and how much others enjoyed the conversation. Do these effects vary across conversations of different lengths?

Conversation Length & Liking. The analysis revealed that conversation length was a significant predictor of liking, b = .03, SE = .009, $t(69)$ = 3.47, $p < .001$, 95% CI [0.01, 0.05], but the interaction between conversation length and rating type was not a significant predictor of liking, b = .006, SE = .007, $t(100)$ = 0.892, p = .37, 95% CI [-0.01, 0.02]. In other words, participants who had longer conversations liked each other more, but the liking gap persisted no matter the length of the conversation. Was the same true for enjoyment?

Conversation Length & Enjoyment. The analysis revealed that conversation length was a significant predictor of enjoyment, b = .03, SE = .008, $t(69)$ = 3.88, $p < .001$, 95% CI [0.02, 0.05], but the interaction between conversation length and rating type was not a significant predictor of enjoyment, b = .007, SE = .007, $t(100)$ = 0.98, p = .38, 95% CI [-0.01, 0.02]. Again, participants who had longer conversations reported greater enjoyment, but regardless of conversation length, participants still underestimated how much their conversation partners enjoyed the conversation.

Conversations Grouped by Length. It might be suspected that the liking and/or enjoyment gap would disappear once people had time to really talk and get to know one another. Thus, to further explore the effects of conversation length, we grouped conversations into three types: short conversations (more than 1*SD* below the mean length, $n = 18$), medium conversations (between 1*SD* below and 1*SD* above the mean length, $n = 60$), and long conversations (more than 1*SD* above the mean length, $n = 24$). We then conducted a series of post-estimation contrasts using the ls means package (Lenth, 2016) to examine the liking gap and the enjoyment gap at each conversation length. A Holm-Bonferroni procedure was used to correct for multiple comparisons.

The liking gap pattern was similar for short, medium, and long conversations. As the left panel of Figure 3 shows, after participants had short conversations they liked their partners ($M_{actual} = 4.38$, 95% CI [3.80, 4.98]) marginally more than they thought their partners liked them ($M_{perceived} = 4.00$, 95% CI [3.41, 4.59]), $t(99) = 1.57$, $p = .12$, estimated mean difference = 0.39, 95% CI [-0.10, 0.88]. After participants had medium length conversations, participants liked their partners ($M_{actual} = 5.30$, 95% CI [4.98, 5.62]) more than they thought their partners liked them ($M_{perceived} = 4.93$, 95% CI [4.61, 5.25]), $t(99) = 2.69$, $p < .01$, estimated mean difference = 0.37, 95% CI [0.09, 0.63]. And after participants had long conversations, participants liked their partners ($M_{actual} = 6.00$, 95% CI [5.49, 6.50]) marginally more than they thought their partners liked them ($M_{perceived} = 5.58$, 95% CI [5.08, 6.09]), $t(99) = 1.94$, $p = .056$, estimated mean difference = 0.42, 95% CI [-0.01, 0.84].

The enjoyment gap pattern was also similar for short, medium, and long conversations. As the right panel of Figure 3 shows, after participants had short conversations, participants reported that they enjoyed the conversation ($M_{actual} = 4.94$, 95% CI [4.39, 5.50]) more than they

thought their partners enjoyed the conversation ($M_{perceived}$ = 4.17, 95% CI [3.61, 4.72]), $t(99)$ = 3.40, $p < .01$, estimated mean difference = 0.78, 95% CI [0.32, 1.23]. After participants had medium length conversations, participants reported that they enjoyed the conversation (M_{actual} = 5.77, 95% CI [5.46, 6.07]) more than they thought their partners enjoyed the conversation ($M_{perceived}$ = 5.35, 95% CI [5.05, 5.65]), $t(99)$ = 3.32, $p < .01$, estimated mean difference = 0.42, 95% CI [0.17, 0.67]. And after participants had long conversations, participants reported that they enjoyed the conversation (M_{actual} = 6.42, 95% CI [5.94, 6.90]) more than they thought their partners enjoyed the conversation ($M_{perceived}$ = 5.83, 95% CI [5.35, 6.31]), $t(99)$ = 2.94, $p < .01$, estimated mean difference = 0.58, 95% CI [0.19, 0.98].

In sum, across conversations that ranged from two to 45 minutes people systematically underestimated the extent to which their conversation partners liked them and enjoyed the conversation.

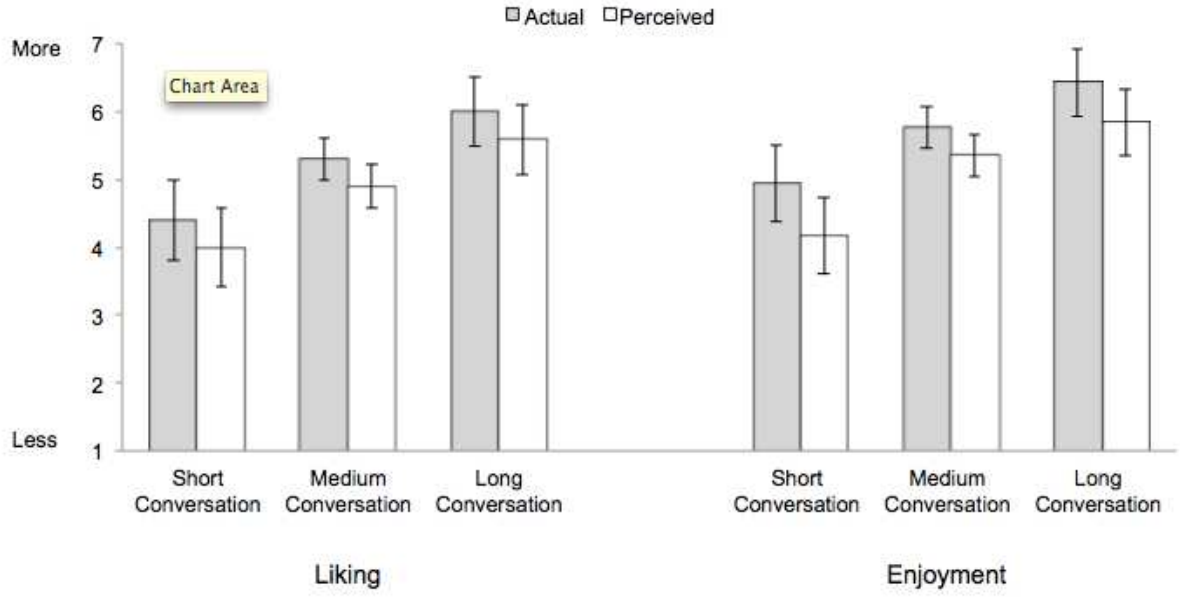

Figure 3. Results of Study 3: mean of actual and perceived liking and conversation enjoyment for short, medium, and long conversations. Error bars show the 95% confidence intervals around the means.

STUDY 4: CAN THE LIKING GAP BE OBSERVED IN THE REAL WORLD?

Method

Purpose

The first three studies all examined primarily undergraduate students in a laboratory environment. Can we find evidence of the liking gap among the general public, in a more natural setting? To do so, we had participants complete measures during several *How to Talk to Strangers* workshops. For this study, we operationalized liking as how "interesting" conversation partners thought one another were, and so at various points during the workshops, we asked people how interesting they found their conversation partner and how interesting they thought their conversation partner found them.

Participants

One hundred and eighteen people (104 at workshops held in the community and 14 at a workshop held on a university campus; 50 men, 61 women, 7 not specified; M_{age} = 29.61, SD_{age} = 8.99, only participants who attended the fifth workshop were asked to report their age, five participants failed to report age) attended one of several *How to Talk to Strangers* workshops in the U.K.; 14 community members attended the first workshop, which was hosted and advertised by the *Royal Society for the Encouragement of Arts, Manufactures and Commerce* as part of a regular series of breakfast sessions for social entrepreneurs; 75 community members attended the

second and fifth workshops, which were hosted and advertised by the U.K. non-profit *Talk to Me*; 15 community members attended the third workshop, which was a public event funded by the *Economic and Social Research Council's Festival of Social Science*; 14 undergraduate students attended the fourth workshop, hosted and advertised by a university department, for professional development purposes. The purpose of these events was to allow attendees to discuss issues related to conversation with the ultimate goal of helping people to more easily form social connections. Our sample size was constrained by the number of people willing to participate.

Procedure

Upon arriving at the event, participants filled out a pre-conversation survey regarding their expectations for the workshop. Participants were then instructed to find a conversation partner whom they did not previously know, and to spend approximately 5 mins introducing themselves. After this initial chat, participants completed a post-conversation survey. For the duration of the workshop, which lasted about 1.5 hrs, participants continued to talk to their conversation partners about workshop related topics.

Participants were asked two primary questions of interest, both before and after their initial conversation with their partner. At the start of the workshop, before talking to their partner, participants were asked to report how interesting they thought their conversation partner would be and how interesting they thought their conversation partner would find them. After their initial conversation with their partner, participants were asked to report how interesting they thought their conversation partner had been, and how interesting they thought their conversation partner had found them. Participants answered these questions on 5-point Likert scales whose endpoints were labeled *not at all* and *extremely*. Participants also completed several additional

measures (e.g., general trust, social connectedness, and so forth) that were of relevance to a different study (see supplementary materials), and completed a battery of demographics measures.

Results

We excluded the data from 15 participants who did not consent to have their data used. We also a priori excluded data from one participant who was on the autism spectrum, which is associated with difficulties during social interactions; the data from that participant's conversation partner were also excluded. This left us with data from 100 participants (43 males, 54 females, and 3 who did not report his or her gender; M_{age} = 30.58, SD_{age} = 9.27) in the data set.

We fit a mixed linear model to the data with rating type (actual or perceived) as the independent variable, and interesting (how interesting the participants in the conversation thought one another were) as the dependent variable. We also included time (the time at which participants were asked: pre-conversation, post-conversation) as a fixed effect to explore the effect of time on how interesting participants thought their conversations were. The model included an intercept for each participant and an intercept for each workshop, as random effects.

Liking Gap. The analysis revealed a significant rating type x time interaction, b = 0.32, SE = 0.13, $t(259) = 2.50$, p = .01, 95% CI [0.07, 0.56]. Post-estimation contrasts were used to explore the nature of this interaction. Before the conversation, participants predicted that they would find their conversation partner to be more interesting ($M_{actual\_pre\text{-}conversation}$ = 3.59, 95% CI [3.44, 3.73]) than their conversation partner would find them ($M_{perceived\_pre\text{-}conversation}$ = 3.22, 95% CI [3.07, 3.37]), $t(259) = 4.12$, $p < .001$, estimated mean difference = 0.37, 95% CI [0.19, 0.54]. And after talking to their partner for approximately 5 mins during the workshop, participants

reported that they found their conversation partner more interesting ($M_{actual\_post\text{-}conversation}$ = 4.30, 95% CI [4.15, 4.44]) than they thought their conversation partner had found them ($M_{perceived\_post\text{-}conversation}$ = 3.61, 95% CI [3.47, 3.76]), $t(259) = 7.73$, $p < .001$, estimated mean difference = 0.68, 95% CI [0.51, 0.86]. In short, participants predicted that their conversation partner would find them less interesting than they found their partner to be, and this mistaken belief grew more mistaken after participants actually had a conversation.

Are Conversations More Interesting Than People Predict? While not the primary aim of the study, collapsing across rating type, time was a significant predictor of interestingness, b = 0.55, SE = 0.07, $t(280) = 7.69$, $p < .001$, 95% CI [0.42, 0.70]. In other words, participants predicted that both they and their conversation partner would be less interesting ($M_{pre\text{-}conversation}$ = 3.40, 95% CI [3.28, 3.52]) than they and their conversation partner actually were ($M_{post\text{-}conversation}$ = 3.96, 95% CI [3.84, 4.08]). A conversation with a stranger, it seems, is better than people predict.

In sum, as shown in Figure 4, when anticipating a future conversation, participants underestimated how interesting their conversation partner would find them. This mistaken belief persisted—and indeed was magnified—after participants actually talked to their conversation partner, though both types of ratings were more positive after the conversation than they were before the conversation.

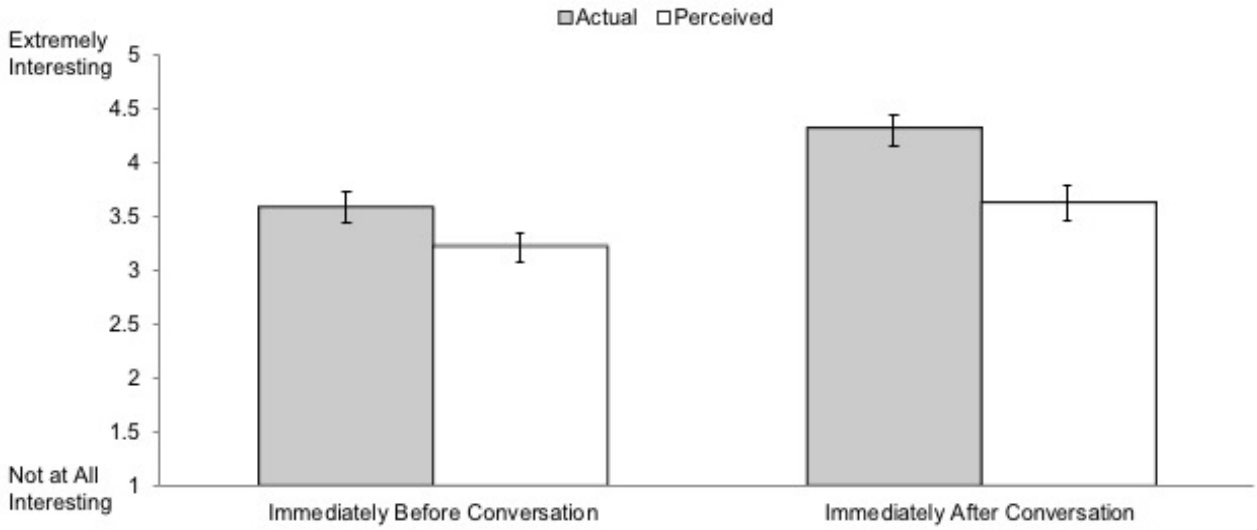

Figure 4. Results of Study 4: mean of actual and perceived interesting ratings before and after conversations took place. Error bars show the 95% confidence intervals around the means.

STUDY 5: DOES THE LIKING GAP PERSIST OVER TIME?

Method

Purpose

In Study 3, we found evidence that the liking gap lasts for at least a couple of hours. Can we find evidence of the liking gap over a longer period of time? We collaborated with a larger longitudinal study, which followed college suitemates over the course of an entire academic year. The primary purpose of that study was to assess the impact of personality on taking steps to initiate relationships, but we added measures to test for the liking gap. Specifically, at five different time points, we asked college students how much they liked their suitemates, and how

much they thought their suitemates liked them. This allowed us to see how long the liking gap lasts as people develop new relationships over time.

Participants

One hundred and two first year college students (49.5% female, 2 participants failed to report sex; M_{age} = 18.29 years, SD = 0.52, 3 participants failed to report age) were recruited as part of a study on suitemates who had been assigned to live together in a dorm at Yale University. Note that dorm assignments are made by residential college deans, so they are not random. Factors such as preferences for staying up late or not, neatness, and playing music in the rooms are considered in making assignments but no personality measures are utilized. Our sample size was determined and constrained by the number of people willing to participate.

Procedure

Incoming first year students in the class of 2020 were recruited in the summer of 2016 to take part in a study investigating "how relationships normally develop." At the beginning of the fall semester (i.e., September) and then at four subsequent time points over the course of the academic year (October, December, February, and May) participants reported on between one and four different people who lived in the same dorm suite. They received $15 for completing an initial survey and an additional $85 if they completed all remaining four surveys. Prior to receiving the fifth and final survey, in order to incentivize delinquent participants to return, participants were given an additional incentive of $50 and were entered into a raffle to win one of ten $100 cash bonuses if they completed the last survey. Survey links were emailed to participants, and participants completed the surveys online.

Among other questions unrelated to our present purposes (see supplementary materials), participants answered a series of questions relevant to the liking gap each time they were

surveyed. Participants answered the following questions about each of their suitemates who also participated in the study: (a) “How much do you like [name of suitemate]?”; (b) “How interested are you in getting to know [name of suitemate] better?”; (c) “How interested are you in becoming better friends with [name of suitemate]?”; (d) “How interested are you in spending more time with [name of suitemate]?” Next, participants answered four questions about how much they believed each of their suitemates liked them: (e) “How much do you think [name of suitemate] likes you?”; (f) “How interested do you think [name of suitemate] is in getting to know you better?”; (g) “How interested do you think [name of suitemate] is in becoming better friends with you?”; (h) “How interested do you think [name of suitemate] is in spending more time with you?” Participants indicated their responses on a 7-point Likert scale whose endpoints were *not at all* and *very much*.

Due to an administrative error, measures A and E were inadvertently removed for one suitemate at time 1 and for all participants at times 2-4. We used the 4-item composite when we had it, and the 3-item composite when we did not (the two composites were highly correlated; $\alpha = .99$). Also, due to an error in the survey flow, there were no data from one of the suitemates in suites of 3 people or more at time 5.

In the fifth and final survey, we incentivized participants to be accurate in estimating how much their suitemates liked them by randomly assigning half of our participants to see the following prompt prior to responding to questions E-H: “At this point in the survey, we want you to think about the people you've been reporting on and tell us what you believe they think about you. Try to be as accurate as possible in your estimates of what they think about you. Whoever makes the most accurate estimates will win a $100 cash bonus. Your answers are confidential.” The other half of our sample was assigned to see the following prompt instead: “At this point in

the survey, we want you to think about the people you've been reporting on and tell us what you believe they think about you. Your answers are confidential."

Results

The four measures of how much participants liked their suitemates and how much participants thought their suitemates liked them were highly correlated (α's > .90) and we collectively refer to them as a *liking index*, which served as our primary dependent variable.

We fit a mixed linear model to the data with rating type (actual or perceived) as an independent variable, and liking as the dependent variable. We also included time (the five time points at which participants were sampled over the course of the year) as an additional independent variable. The model included the independent variables as fixed effects, and an intercept for each suitemate that participants reported on, an intercept for each participant, and an intercept for each group (i.e., suite) as random effects.

Liking Gap. The analysis revealed that rating type (actual or perceived) was a significant predictor of liking, $b = -0.36$, $SE = 0.06$, $t(1131) = -6.16$, $p < .001$, 95% CI [-0.47, -0.24]. Once again, participants underestimated how much others liked them. Did the liking gap vary over time?

Liking Gap Over Time. As shown in Figure 5, post-estimation contrasts revealed that rating type (actual or perceived) was a significant predictor of liking at time 1, time 2, time 3, and time 4 (all p's < .01). Rating type was not a significant predictor of liking at the final time point, time 5 ($p = .87$). In short, and as shown in Figure 5, people underestimated how much their suitemates liked them at all time points except for the final one.

Incentivizing Accuracy. At the final time point, we tested whether incentivizing participants to be accurate affected how much participants thought their suitemates liked them.

Analysis revealed that incentivizing participants did not have a significant effect on how much they thought others liked them compared to how much non-incentivized participants thought others liked them, b = -0.07, SE = 0.28, $t(93)$ = -0.25, p = .81, 95% CI [-0.62, 0.48]. The fact that a chance for a large monetary reward did not have a significant effect on their estimates is evidence that participants believed what they were reporting.

In sum, Study 5 found that the liking gap persisted for several months as suitemates formed and developed new relationships. It did disappear at the final time point. That may be due to people getting to know one another well by that time, or due to the fact that the students were making decisions regarding whether to live together the following year which may have forced discussions that revealed liking, or both.

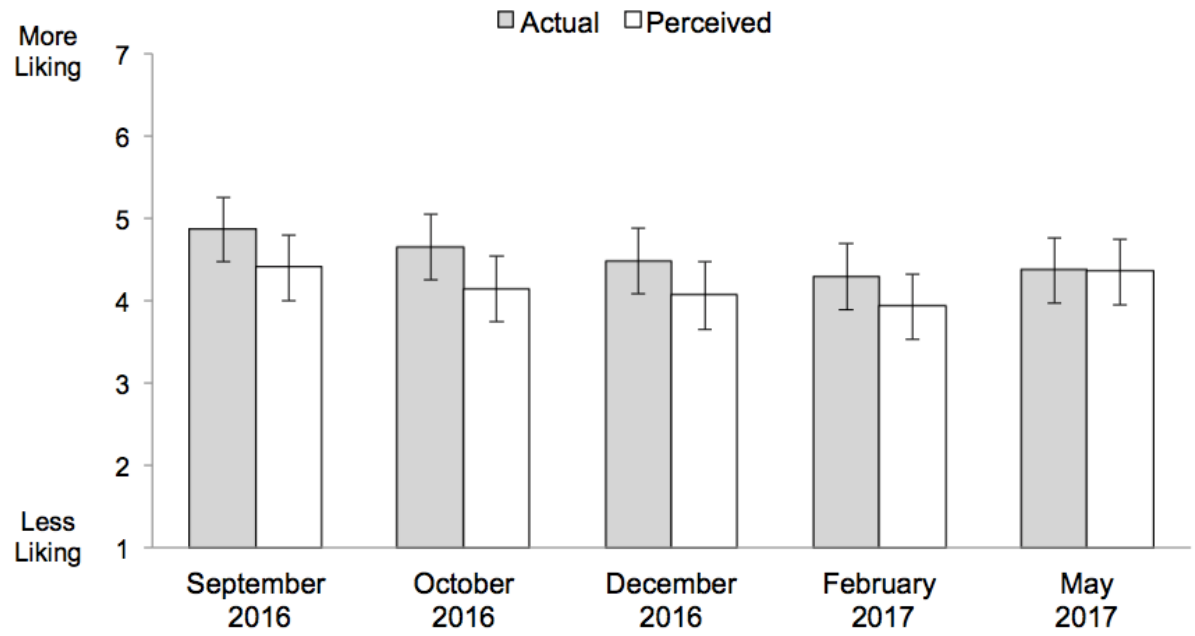

Figure 5. Results of Study 5: mean of actual and perceived liking of suitemates at five intervals during an academic year. Error bars show the 95% confidence intervals around the means.

Discussion

People in our studies systematically underestimated how much their conversation partners liked them and enjoyed their company (Studies 1-5), a mistake we call the *liking gap.* The liking gap persisted over short, medium, and long conversations (Study 3), and even over the course of a year, as dorm mates developed new relationships (Study 5). Further, the liking gap was not limited to students, but was also observed in members of the general public (Study 4). The liking gap was supported by the fact that people's thoughts about their own conversational performance tended to be more negative than their thoughts about others' performance (Study 2).

The liking gap may at first glance appear to contradict what we know about people's tendency to hold themselves in particularly high regard. Indeed, decades of research have shown that people hold overly favorable views about everything from their marriages to their ability to operate a motor vehicle (Alicke, 1985; Kruger & Dunning, 1999; Weinstein, 1980). However, emerging evidence shows that people's outlooks can be decidedly less rosy when thinking about their social interactions (e.g., Deri, Davidai, & Gilovich, 2017; Epley & Schroeder, 2014; Whillans, Christie, Cheung, Jordan, & Chen, 2017). Conversation appears to be a domain in which people display uncharacteristic pessimism about their performance.

Important questions remain. Most notably, why are people's thoughts about their own conversational performance so negative, and why are people's thoughts about themselves so much more negative than their thoughts about their partners? And why do people not correct for their overly negative thoughts when estimating how much they are liked? Research suggests several reasons.

First, it seems functional for people to call to mind their conversational mistakes so that they can improve for next time (Epstude & Roese, 2008). After telling a new story, speakers might think about how to get to the point quicker, fine-tune a punchline, or liven up their delivery, and this might make their initial story seem a bit dull by comparison. But listeners do not have this same incentive to improve a partner's story for next time. For them, they got the main point, the punchline was funny enough, and the delivery seemed perfectly fine. In short, people's harsh inner critic can be functional when it comes to self-improvement, but we suspect this prevents people from realizing how positively others evaluate them.

Second, people have higher standards for themselves than they do for others. This is in part because people have direct access to how good their conversational performance *could* have been (e.g., "Last time I told this story, I did a better job," "I can't believe I forgot the part about how we went camping in our backyard," "Maybe it's because I'm sleep deprived"). In other words, people can easily compare their actual conversational performance to their ideal, but others do not have access to this same ideal (Gilovich, Kruger, & Medvec, 2002). Moreover, others' expectations for what it is like to have a conversation with someone new are often pretty dismal (Epley & Schroeder, 2014). So whereas speakers are thinking they have failed to live up to their ideal, listeners are thinking that it could have been much worse, and this different standard of comparison for oneself and for others may well be one reason why people underestimate how much their conversation partners enjoy their company.

Third, people overestimate how much their feelings are on display in social interactions. For example, people think that the self-consciousness they feel is readily apparent to those around them even when that is not actually the case (Gilovich, Medvec, & Savitsky, 1998; Van Boven, Loewenstein, & Dunning, 2005). In people's minds, they are stammering and nervous

and searching for the right words, but others cannot see the inside of their minds; rather, they are paying attention to overt behavior (Pronin, Kruger, Savitsky, & Ross, 2001; Williams, Gilovich, & Dunning, 2012). And, it just so happens that people's overt behavior is often initiated unconsciously, and is for the most part quite likable (Chartrand & Bargh, 1999). Years of practice have largely shaped people into pleasing conversation partners who gaze, and laugh, and smile, and pause, and gesture, and speak, and take turns in ways that synch with their conversation partners (Garrod & Pickering, 2004; Lakin et al., 2003; Richardson, Dale, & Kirkham, 2007; Stivers et al., 2009). In short, consciously people feel like their social awkwardness is on display, but unconsciously people are executing behavior that makes for remarkably smooth conversations.

In sum, one of life's greatest fears is social evaluation. And so it makes sense that people are vigilant to any potential causes for embarrassment or social awkwardness. In addition, people call to mind their social flaws to fix for next time, people have access to their ideal selves to which their actual selves cannot live up, and people think their social awkwardness is on display more than it really is. Taken together, it seems understandable why people's thoughts about their own social performance might be overly negative, and how this might lead them to underestimate how much others like them and enjoy their company.

Coda

Conversations have the power to turn strangers into friends, coffee dates into marriages, and job interviews into jobs. But part of what makes conversations difficult is that people don't know what their conversation partners *really* think of them, and so people use their own thoughts as a substitute, but their own thoughts tend to be more negative than reality. The result is that

people systemically underestimate how much their conversation partners like them and enjoy their company. Conversations are a great source of happiness in our lives, but even more than we realize, it seems, as others like us more than we know.

Acknowledgments

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References

Alicke, M. D. (1985). Global Self-Evaluation as Determined by the Desirability and Controllability of Trait Adjectives. *Journal of Personality and Social Psychology*, *49*, 1621–1630.

Ames, D. R., Rose, P., & Anderson, C. P. (2006). The NPI-16 as a short measure of narcissism. *Journal of Research in Personality*, *40*(4), 440-450.

Bates, D., Maechler, M., Bolker, B., & Walker, S. (2016). lme4: Linear mixed-effects models using Eigen and S4. 2014. R package version 1.1-7.

Beck, L. A., & Clark, M. S. (2010). Looking a gift horse in the mouth as a defense against increasing intimacy. *Journal of Experimental Social Psychology*, *46*(4), 676-679.

Berenson, K. R., Gyurak, A., Ayduk, Ö., Downey, G., Garner, M. J., Mogg, K., ... & Pine, D. S. (2009). Rejection sensitivity and disruption of attention by social threat cues. *Journal of Research in Personality*, *43*(6), 1064-1072.

Blumberg, H. H. (1972). Communication of interpersonal evaluations. *Journal of Personality and Social Psychology*, *23*, 157–162.

Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage* (Vol. 4). Cambridge University Press.

Brozovich, F., & Heimberg, R. G. (2008). An analysis of post-event processing in social anxiety disorder. *Clinical Psychology Review*, *28*, 891–903.

Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: the perception–behavior link and social interaction. *Journal of Personality and Social Psychology*, *76*(6), 893.

Deri, S., Davidai, S., & Gilovich, T. (2017). Home alone: Why people believe others' social lives are richer than their own. *Journal of Personality and Social Psychology*, *113*, 858–877.

Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science*, *302*(5643), 290-292.

Epley, N., Keysar, B., Van Boven, L., & Gilovich, T. (2004). Perspective Taking as Egocentric Anchoring and Adjustment. *Journal of Personality and Social Psychology*, *87*, 327–339.

Epley, N., & Schroeder, J. (2014). Mistakenly seeking solitude. *Journal of Experimental Psychology: General*, *143*(5).

Epstude, K., & Roese, N. J. (2008). The functional theory of counterfactual thinking. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc*, *12*, 168–92.

Garrod, S., & Pickering, M. J. (2004). Why is conversation so easy? *Trends in Cognitive Sciences*, *8*(1), 8-11.

Gilovich, T., Kruger, J., & Medvec, V. H. (2002). The spotlight effect revisited: Overestimating the manifest variability of our actions and appearance. *Journal of Experimental Social Psychology*, *38*(1), 93-99.

Gilovich, T., Medvec, V. H., & Savitsky, K. (1998). The illusion of transparency: biased assessments of others' ability to read one's emotional states. *Journal of Personality and Social Psychology*, *75*, 332–346.

Kenny, D. A., & DePaulo, B. M. (1993). Do people know how others view them? An empirical and theoretical account. *Psychological Bulletin*, *114*(1), 145.

Keysar, B. (2007). Communication and miscommunication: The role of egocentric processes. *Intercultural Pragmatics*, *4*, 71–84.

Kruger, J., & Dunning, D. (1999). Personality and Social Psychology Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated. *Journal of*

Personality and Social Psychology, *77*, 1–34.

Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2014). LmerTest: Tests for random and fixed effects for linear mixed effect models. R package, version 2.0-3.

Lakin, J. L., Jefferis, V. E., Cheng, C. M., & Chartrand, T. L. (2003). the Chameleon Effect As Social Glue:Evidence for the Evolutionary Significance of Nonconscious Mimicry. *Journal of Nonverbal Behavior*, *27*, 145–161.

Lenth, R. V. (2016). Least-squares means: the R package lsmeans. *J Stat Softw*, *69*(1), 1-33

Lieberman, M. D., & Rosenthal, R. (2001). Why introverts can't always tell who likes them: Multitasking and nonverbal decoding. *Journal of Personality and Social Psychology*, *80*(2), 294.

McCroskey, J. C., Andersen, J. F., Richmond, V. P., & Wheeless, L. R. (1981). Communication apprehension of elementary and secondary students and teachers. *Communication Education*, *30*(2), 122-132.

Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin*, *128*, 638–662.

Pronin, E., Kruger, J., Savtisky, K., & Ross, L. (2001). You don't know me, but I know you: The illusion of asymmetric insight. *Journal of Personality and Social Psychology*, *81*(4), 639.

Richardson, D. C., Dale, R., & Kirkham, N. Z. (2007). The art of conversation is coordination. *Psychological Science*, *18*(5), 407-413.

Rosenberg, M. (1965). *Society and the Adolescent Self-image*. Princeton, NJ: Princeton University Press.

Savitsky, K., Epley, N., & Gilovich, T. (2001). Do others judge us as harshly as we think? Overestimating the impact of our failures, shortcomings, and mishaps. *Journal of*

Personality and Social Psychology, *81*(1), 44.

Savitsky, K., & Gilovich, T. (2003). The illusion of transparency and the alleviation of speech anxiety. *Journal of Experimental Social Psychology*, *39*, 618–625.

Schegloff, E. A., Jefferson, G., & Sacks, H. (1977). The preference for self-correction in the organization of repair in conversation. *Language*, *53*, 361–382.

Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization model. *Psychological Bulletin*, *92*(3), 641.

Stivers, T., Enfield, N. J., Brown, P., Englert, C., Hayashi, M., Heinemann, T., ... & Levinson, S. C. (2009). Universals and cultural variation in turn-taking in conversation. *Proceedings of the National Academy of Sciences*, *106*(26), 10587-10592.

Swann, W. B., Stein-Seroussi, A., & McNulty, S. E. (1992). Outcasts in a white-lie society: the enigmatic worlds of people with negative self-conceptions. *Journal of Personality and Social Psychology*, *62*, 618–624.

Tesser, A., & Rosen, S. (1975). The Reluctance to Transmit Bad News. *Advances in Experimental Social Psychology*, 8, 193-232.

Van Boven, L., Loewenstein, G., & Dunning, D. (2005). The illusion of courage in social predictions: Underestimating the impact of fear of embarrassment on other people. *Organizational Behavior and Human Decision Processes*, *96*, 130–141.

Weinstein, N. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, *39*, 806–820.

Whillans, A. V., Christie, C. D., Cheung, S., Jordan, A. H., & Chen, F. S. (2017). From Misperception to Social Connection: Correlates and Consequences of Overestimating Others' Social Connectedness. *Personality and Social Psychology Bulletin*, *43*, 1696–1711.

Williams, E. F., Gilovich, T., & Dunning, D. (2012). Being All That You Can Be. *Personality and Social Psychology Bulletin*, *38*, 143–154.

APPENDIX: SUPPLEMENTARY MEASURES

STUDY 1

Measures for All Participants

Demographic Measures:

- "What is your gender?" which participants answered by selecting "Male" or "Female" or "Prefer not to answer"
- "What is your age?" which participants answered by writing whichever number corresponded with their age.
- "What is your race/ethnicity?" which participants answered by selecting "American Indian or Alaska Native" or "Asian" or "Black or African-American" or "Hispanic or Latino Origin" or "Native Hawaiian or Pacific Islander" or "White" or "Other" or "More than 1 of the above" or "Prefer not to answer."

Familiarity Measures:

- "Did you already know the other participant prior to seeing them in the lab today? Please use the scale below to indicate whether and how well you know them. If this is the first time you've ever seen the other participant, select '1-not at all.'" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very well*.
- "If you already knew the other participant prior to seeing them in the lab today, please elaborate on how you know them in the space provided below."

Measures for Self's Impressions of Partner

Exploratory Measures:

- "How good of a first impression did the other participant make when you were interacting?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "How much did you feel like the other participant self-disclosed to you (i.e., how much did they share about themselves with you)?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "Select the image below that best reflects how much of the other participant you know. The image on the far left is just a sliver of the person, and the image on the far right is the whole person." They answered this by selecting one of nine pictures of circles filled in to varying degrees, from a sliver on the far left to fully filled in on the far right.

- "What was your impression of the other participant? Feel free to write as much as you can about your genuine impression. Everything you report will be kept confidential" which participants answered by writing as much as they wished.

Measures for Perceived Impressions of Self by Partner

Exploratory Measures:

- "How good of a first impression do you think you made when you were interacting with the other participant?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "How much did you feel like you self-disclosed to the other participant (i.e., how much did you share about yourself with them)?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "Select the image below that best reflects how much of yourself the other participant knows. The image on the far left is just a sliver of you, and the image on the far right is your whole person." They answered this by selecting one of nine pictures of circles filled in to varying degrees, from a sliver on the far left to fully filled in on the far right.

Additional Measures

- "How similar are you and the other participant?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "How much does it matter to you how similar/dissimilar you are to someone when it comes to making friends with that person?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "How much does your similarity/dissimilarity to someone stand out to you (i.e., how much do you notice it) when it comes to making friends?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "How much do you think people's similarity/dissimilarity to one another matters to them when it comes to making friends?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "How much do you think people's similarity/dissimilarity to one another stands out to them (i.e., how much do they notice it) when it comes to making friends?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all* and *very.*
- "Would you like to exchange contact information with the other participant? If so, please indicate your preferred way to get in touch below and put your contact info in the space provided." They were told either "We will only share this information with the other participant if they also want to be in touch" or "We will share this

information with the other participant." They answered by providing their email or phone number, or not.

STUDY 2

Measures for All Participants

The demographic and familiarity measures in Study 1 were also included in this Study.

Measures for Self's Impressions of Partner

Exploratory Measures:

- "What is your impression of the other participant?" which participants answered by writing as much as they wished.
- "What kind of first impression did the other participant make when you were interacting?" which they answered using a 7-point Likert scale whose endpoints were labeled *very bad* and *very good.*
- "How effortful was it for you to give off a good impression during your conversation?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all effortful* and *very effortful.*
- "Impressions are constantly being formed and reformed over the course of a conversation. But sometimes impressions are formed quickly near the beginning of the conversation. Other times, it takes a while and impressions are only formed toward the end of the conversation. Regarding your impression of the other person, when do you think your impression of them was mainly formed?" which they answered using a 5-point scale: *1-before we started talking, 2-at the very beginning of our conversation, 3-in the first couple minutes, 4-toward the end of our conversation, 5-after the conversation ended.*
- "What are three adjectives you would use to describe the other person? Type them in the spaces provided below."

Measures for Perceived Impressions of Self by Partner

Exploratory Measures:

- "What do you think the other participant's impression of you is?" which participants answered by writing as much as they wished.
- "What kind of a first impression do you think you made to the other participant when you were interacting with them?" which they answered using a 7-point Likert scale whose endpoints were labeled *very bad* and *very good.*

- "How effortful do you think it was for the other participant to give off a good impression during your conversation?" which they answered using a 7-point Likert scale whose endpoints were labeled *not at all effortful* and *very effortful.*
- "What are three adjectives you think the other person would use to describe you? Type them in the spaces provided below."

STUDY 3

Note that our main dependent measures were embedded in a larger study conducted by researchers in Daniel Gilbert's Laboratory at Harvard University. All measures are available upon request.

- The demographic and familiarity measures in Study 1 were also included in this Study.

STUDY 4

Note that our main dependent measures were embedded in a larger study conducted by researchers in Gillian Sandstrom's Laboratory at University of Essex. All measures are available upon request.

STUDY 5

Note that our main dependent measures were embedded in a larger study conducted by researchers in Margaret Clark's Laboratory at Yale University. All measures are available upon request.

- The demographic and familiarity measures in Study 1 were also included in this Study.
- In the fifth survey, we measured how modest participants were by asking them to indicate how open-minded, intelligent, logical, imaginative, tolerant, and cultured they are compared to the average Yale student, which they answered using six 19-point Likert scales whose endpoints were labeled *exhibit much less [than the average Yale student]* and *exhibit much more [than the average Yale student].*
- In the fifth survey, half our participants read the following after all other relevant measures were completed: "Over the course of this study, we have compiled people's answers to the questions about how much people like each other and are interested in becoming closer friends. According to our data, our participants report that they like others 4.48 (out of 7) and are interested in becoming closer 4.61 (out of 7). But they believe others only like them 4.13 (out of 7) and are only interested in becoming closer 4.16 (out of 7). These differences between how much people actually like you and want to become closer and your beliefs about how much people like you and

want to get closer are statistically significant. What this means is that the people you've been reporting on in this survey, on average, actually like you and want to get to know you better more than you think. In other words, people significantly underestimate how much others like them and want to get to know them better. On average, your friends and acquaintances like you and want to get to know you more than you realize." Next, they answered the following questions by indicating their responses on Likert scales: "Overall, how do you feel about your relationship with [suitemate]?" and "How likely are you to get in touch with [suitemate] in the next few days?"