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The illusion of courage in social predictions: Underestimating the impact of fear of embarrassment on other people ☆

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Abstract

The results of two experiments support the thesis that emotional perspective taking entails two judgments: a prediction of one's own preferences and decisions in a different emotional situation, and an adjustment of this prediction to accommodate perceived differences between self and others. Participants overestimated others' willingness to engage in embarrassing public performances—miming (Experiment 1) and dancing (Experiment 2)—in exchange for money. Consistent with a dual judgment model, this overestimation was greater among participants facing a hypothetical rather than a real decision to perform. Further, participants' predictions of others' willingness to perform were more closely correlated with self-predictions than with participants' estimates of others' thoughts about the costs and benefits of performing.
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Accurately predicting others' reactions to emotional situations is an important part of everyday social life. Knowing how an employee will deal with criticism is helpful for deciding how best to provide performance feedback. Knowing how a friend will respond to long-term physical duress is useful in deciding whether to invite him on an extended wilderness adventure. And knowing how much co-workers will enjoy (or dread) singing in front of friends and colleagues is important for deciding whether to schedule a karaoke contest for the company retreat.

How do people predict others' preferences and decisions in emotional situations? That is, how do people engage in emotional perspective taking? We examine this question in the context of people's predictions of others' reactions to embarrassing situations.

Fear of embarrassment is an important determinant of social behavior. Social psychologists have cited the impact of fear of embarrassment in non-intervention in emergency situations (Latané & Darley, 1970), failures to oppose unpopular policies or social norms (Miller & McFarland, 1987; Prentice & Miller, 1993; Van Boven, 2000), obedience to authority (Sabini, Seipmann, & Stein, 2001), and lovers' failure to use contraception (Herold, 1981; Leary & Dobbins, 1983). And fear of embarrassment is one reason why regrettable inactions are more durable than regrettable actions (Gilovich, Kerr, & Medvec, 1993; Gilovich & Medvec, 1995). Because fear of embarrassment is such a potent barrier to social action (Miller, 1992; Miller & Leary, 1992),

making good decisions in social situations and accurately interpreting social behavior often depends on accurately predicting the impact of fear of embarrassment on other people.

Based on our own and others' research, we hypothesized that people underestimate the impact of fear of embarrassment on others' preferences and decisions. Specifically, we hypothesized that people overestimate others' willingness to engage in embarrassing public performances. This "illusion of courage" in social predictions follows from a model of emotional perspective taking in which predictions of others' preferences and decisions in emotional situations depends partly on predictions of one's own reactions to those situations. Because people underestimate the impact of fear of embarrassment on themselves, overestimating their own willingness to engage in embarrassing public performances (Van Boven, Loewenstein, Dunning, & Welch, 2004), we expected them to overestimate others' willingness to engage in public performances.

A dual judgment model of emotional perspective taking

We propose that emotional perspective taking entails two, distinct judgments, represented by the two solid arrows in Fig. 1 (Van Boven & Loewenstein, 2003, in press-a, in press-b). The first is a prediction of what one's own preferences and decisions would be in a different emotional situation (the vertical solid arrow in Fig. 1). For example, one might predict whether a colleague would enjoy karaoke by first predicting whether oneself would enjoy singing popular tunes in front of an audience. The second judgment is an estimation of how similar the other person is to the self, and, hence, how informative the self-prediction is about others' reactions (the horizontal solid arrow in Fig. 1). Believing that a colleague is more extroverted than oneself suggests adjusting one's own reluctance to sing to accommodate the colleague's outgoing personality.

Our dual judgment model of emotional perspective taking differs from other models of perspective taking in two important ways. First, many models of perspective taking focus on people's predictions of others' reactions to situations or decisions that are exactly the same as those faced by the self—for example, others who are faced with a similar decision to wear a sandwich board or not (Ross, Greene, & House, 1977), asked a similar question about their preference for 1980s or 1960s music (Gilovich, 1990), confronted with a similar decision about whether to donate to charity (Epley & Dunning, 2000; Goethals, Messick, & Allison, 1991), or asked a similar question about their attitudes toward social norms (Miller & McFarland, 1987; Prentice & Miller, 1993; Van Boven, 2000). Because this previous research (represented by the horizontal dashed arrow in Fig. 1) has focused on perspective taking within the same, typically non-emotional, situation, previous theorizing has focused primarily on factors that influence judgments of how similar or dissimilar others are to the self (e.g., Krueger & Clement, 1994; Prentice & Miller, 1996). Emotional perspective taking, in contrast, concerns predictions of how other people would react to being in a different emotional situation from the situation the self is currently in. Accordingly, we suggest that emotional perspective taking entails the additional judgment of how the self would respond to being in a different emotional situation.
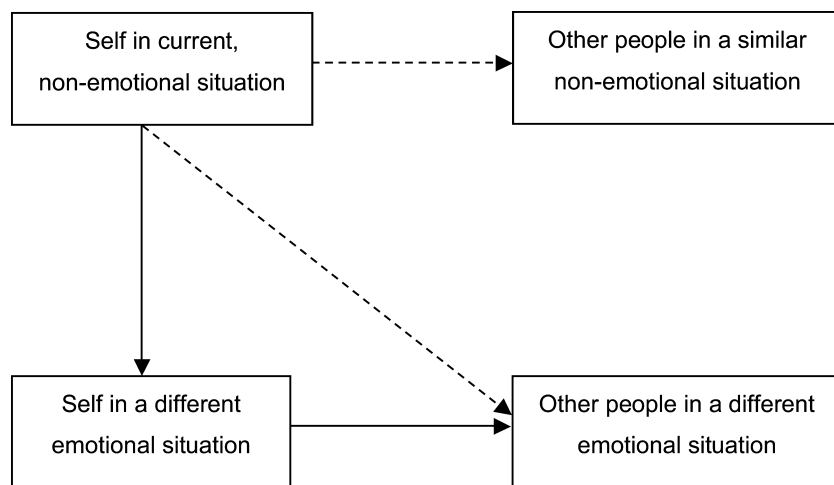

Fig. 1. Schematic representation of perspective taking across similar situations and across different emotional situations. The dual judgment model of emotional perspective taking is represented by the two solid arrows. The horizontal dashed arrow represents predictions of others who are in similar situations as the self. The diagonal dashed arrow represents simultaneously accounting for the reactions of different people who are in different situations than the self.

Second, other examinations of cross-situational perspective-taking posit a single judgment that simultaneously accounts for differences between the self and the target and for differences between others' situation and the situation the self is currently in (the diagonal dashed arrow in Fig. 2, Epley, Keysar, Van Boven, & Gilovich, 2004; Keysar & Barr, 2002; Nickerson, 1999). For example, people's own interpretation of an ambiguous communication may serve as a judgmental anchor from which they adjust to estimate the interpretation of other people who were provided with different information about the communication (Epley et al., 2004). Although anchoring and adjustment of this type may characterize perspective taking across different non-emotional situations, we contend that perspective taking across different emotional situations entails two separate judgments: a prediction of one's own reaction to a different emotional situation, and an adjustment to this prediction to accommodate differences between oneself and others.

A novel implication of our dual-judgment model is that accurate emotional perspective taking depends both on the accuracy of self-predictions and on the accuracy of assessments of the similarity between self and others. Even if people are perfectly calibrated in their self-predictions, they may be biased in judging how similar they are to others. And even if people are perfectly calibrated in their judgments of how similar they are to others, biased self-predictions could produce biased social-predictions. We propose that judgmental bias of both types contribute to the illusion of courage in social-predictions.

The illusion of courage in self-predictions

With respect to self-predictions (the vertical solid arrow in Fig. 1), our own research indicates that people underestimate the impact of fear of embarrassment on their own preferences and decisions. When an embarrassing public performance is not real and immediate, people overestimate how willing they would be to dance, perform a mime, or tell a joke in exchange for money (Van Boven et al., 2004). This illusion of courage in self-predictions is a specific case of "hot/cold empathy gaps," which occur when people in an unaroused state underestimate the impact of being in an emotional situation on their preferences and decisions (Loewenstein, 1999; Loewenstein, O'Donoghue, & Rabin, 2003). For instance, people who do not own an object underestimate how attached they would be to it and how much money they would demand to sell the object if they did own it (Loewenstein & Adler, 1995; Van Boven, Dunning, & Loewenstein, 2000; Van Boven, Loewenstein, & Dunning, 2003). And people who are in a relatively neutral state underestimate how much they would be bothered by

thirst versus hunger compared with people whose thirst is aroused because they just engaged in 20 min of cardiovascular exercise (Van Boven & Loewenstein, 2003).

Hot/cold empathy gaps arise because people do not anticipate how much emotional arousal influences their construal of the situation. In particular, people underestimate how much arousal increases their focus on emotional information relative to non-emotional information. Emotional arousal, particularly of negative affect such as fear and anxiety, narrows attention (Basso, Schefft, Ris, & Dember, 1996; Derryberry, 1993; Derryberry & Reed, 1998) and inhibits attention to non-emotional information (Fox, Russo, & Bowles, 2001; Fox, Russo, & Dutton, 2002). This "emotional focusing" can increase the judgmental weight of emotional information relative to non-emotional information, exacerbating the tendency to underweight non-focal information when making predictions (Chambers, Windschitl, & Suls, 2003; Kruger & Burrus, 2003; Moore & Kim, 2003; Savitsky, Epley, & Gilovich, 2001; Schkade & Kahneman, 1998; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000; Windschitl, Krueger, & Simms, 2003).

In the case of embarrassment, the fear and anxiety aroused by facing a real and immediate public performance causes people to focus more on being socially evaluated relative to the potential benefits of embarrassing behavior (Van Boven et al., 2004; Study 5). In one study, we found that, compared with those facing a purely hypothetical performance, participants facing a real and immediate decision to dance for money reported thinking more about being evaluated by others relative to the money they could earn. The difference between people's thoughts about social evaluation and their thoughts about money—an index of emotional focusing—statistically mediated the impact of facing a hypothetical or real decision on people's willingness to dance.

Our other research on the illusion of courage in self-predictions led us to predict that people's overestimation of their own willingness to engage in embarrassing performances would contribute to the illusion of courage in social-predictions. Specifically, we hypothesized that people who simply imagined facing the choice of engaging in an embarrassing performance in exchange for money would predict that others would be more willing to perform compared with people who actually faced the choice of performing for money.

Differences between self and others in fear of embarrassment

With respect to assessments of the similarity between the self and others (the horizontal solid arrow in Fig. 1), previous research demonstrates that people have an enduring intuitive belief that others experience fear of

embarrassment less than the self (McFarland & Miller, 1990; Miller & McFarland, 1987; Sabini, Cosmas, Siepmann, & Stein, 1999; Van Boven, 2000). This belief is an instance of a more general intuitive theory that others experience self-conscious emotions less than the self (McFarland & Miller, 1990; Miller & McFarland, 1987; Vorauer & Ratner, 1996). Because people often restrain their display of self-conscious emotions (Kleck et al., 1976; Kraut, 1982; Lanzetta, Cartwright-Smith, & Kleck, 1976), evidence about the intensity of others' self-conscious emotions tends to be less cognitively accessible than evidence about one's own self-conscious emotions. This differential accessibility can lead people to infer that others experience self-conscious emotions less than the self (Schwarz & Vaughn, 2002; Taylor, 1982; Tversky & Kahneman, 1973).

People's belief that others experience less fear of embarrassment than the self led us to hypothesize that people would generally overestimate others' willingness to engage in an embarrassing public performance in exchange for money, regardless of whether people themselves faced a real or hypothetical performance. More important, our dual judgment model implies that this overestimation would be moderated by people's prediction of their own willingness to perform.

The present research

We examined the illusion of courage in social predictions in two experiments. We confronted people with either purely hypothetical or potentially real decisions to engage in embarrassing public performances in exchange for money. We asked people to predict other people's willingness to mime (Experiment 1) and dance (Experiment 2). Performing in front of an audience is embarrassing for many reasons, including simple conspicuousness and the possibility of negative social evaluation (Miller, 1992; Sabini et al., 2001). The decision to engage in an embarrassing performance is therefore a function of the avoidance motivations associated with embarrassing public performances relative to the approach motivation associated with earning money.

We expected to differentiate the two judgments in our model by demonstrating two trends. First, we expected that people's predictions of others' willingness to perform would be strongly correlated with people's own willingness to perform. People who faced a hypothetical decision to perform for money should therefore predict that other people would be more willing to perform compared with people who faced a real decision to perform. Second, we expected that people would generally overestimate others' willingness to engage in an embarrassing performance, independent of whether people themselves faced a real or hypothetical performance. Furthermore, in Experiment 2 we examined whether

people's predictions of others' willingness to perform were more closely associated with predictions of their own willingness to perform, as implied by our model, or with people's estimates of how much others thought about the costs versus the benefits of performing.

Experiment 1: Miming

Participants were asked to predict how willing they and other people would be to perform a mime in front of a large audience in exchange for money. For some participants, the performance was potentially real: they knew that they might actually have to mime if they indicated a willingness to do so. For other participants, the performance was purely hypothetical: they knew they would not have to mime no matter how they responded. All participants were asked to take the perspective of the other participants facing a real performance, and to predict how willing to perform those participants would be, on average. We expected that participants in both groups would exhibit an illusion of courage, overestimating others' willingness to perform compared with participants who faced a potentially real performance. We also expected this overestimation to be pronounced among participants facing a purely hypothetical performance compared with those facing a potentially real performance. Further, we expected this differential overestimation of others' willingness to perform to be mediated by participants' predictions of their own willingness to perform.

Method

University undergraduates in a large lecture class ($N = 174$) participated as part of a class exercise. The experimenter distributed white and green versions of a questionnaire randomly assigning participants to either the real ($n = 86$) or hypothetical performance condition ($n = 88$). Participants in the real performance condition read:

Students with green sheets of paper—like you—are being given the option of performing one of 20 randomly selected mimes in front of the class for a payment of $5. The instructor will randomly select some of the students with green sheets who have agreed to perform a mime to do so. The instructor will randomly select a mime for each student to perform. The instructor will chose from the following mimes: basketball (the ball itself), bicycle, blender, dog, cheetah, computer, elephant, file cabinet, ocean liner, ocean waves, porcupine, scotch tape, skeet shooter, snake, stapler, thumb tack, washing machine, waste basket, waterfall, and willow tree. Students will perform the mime until someone from the class correctly identifies it. Mimers may use whatever body movements they wish, but may not use words or

props. Notice that because not everyone who indicates a willingness to perform a mime will actually be called upon to do so, no one will notice if you choose not to perform a mime.

Participants in the hypothetical performance condition received identical instructions, except they were printed on white paper and specified that participants would not actually be asked to mime.

As measures of participants' own willingness to perform, they stated in dollars the lowest price they would have to be paid to mime in front of the class. They also indicated whether or not they would be willing to perform a mime in exchange for $5. Participants were also asked to consider the (other) participants in the real performance condition and to estimate the average lowest performance price of those participants, as well as the percentage of those participants that would agree to mime for $5. The order of the two questions pertaining to participants themselves and the two questions pertaining to the other participants was counterbalanced, had no reliable effect, and is not discussed further.

After the questionnaires were collected, the experimenter randomly selected five willing students from the real performance condition to mime. Participants were thanked, paid, and everyone was debriefed.

Results and discussion

Because performance prices were positively skewed, we performed natural log transformations before analyzing the data. For interpretational ease, we present back-transformed averages. We excluded from all analyses one participant from the hypothetical performance condition who stated an inconsistent performance price and decision to mime (resulting $N = 173$).

As anticipated, participants overestimated others' willingness to perform a mime, and this overestimation was greater among participants who faced a purely hypothetical performance compared with those who faced a potentially real performance (see Fig. 2). The performance price stated by participants who faced a potentially real performance ($M = \$19.61$) was underestimated both by participants who faced a hypothetical performance ($M = \$8.57$, $d = .70$, $t[171] = 4.58$, 95% C.I. $= \$1.51–\$2.79$) and those who faced a real performance ($M = \$11.32$, $d = 1.21$, $t[85] = 5.57$, 95% C.I. $= \$1.35–\$1.88$). Also as anticipated, participants who faced a hypothetical performance predicted that participants facing a real performance would state a lower performance price than did participants who faced a potentially real performance ($d = .30$, $t[171] = 1.94$, 95% C.I. $= -\$1.01–\$1.67$).

The impact of the reality of the performance on participants' social-predictions was mirrored in self-predictions. Replicating our previous research, participants who faced a hypothetical performance
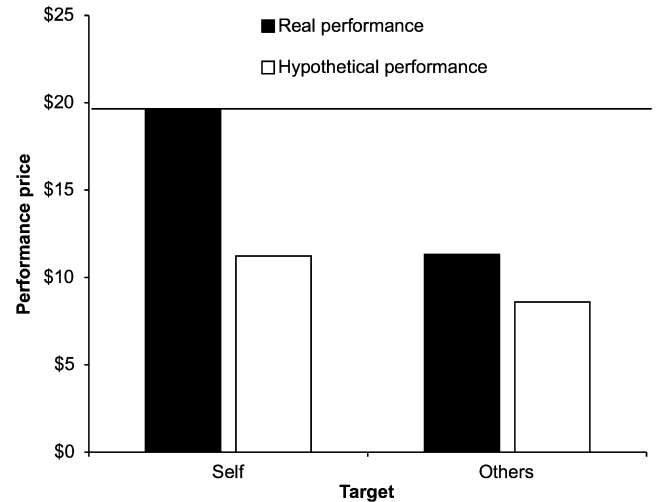

Fig. 2. Experiment 1: Miming. For participants who faced a hypothetical and real performance, their own lowest performance price, and their estimate of the average lowest performance price of other participants who faced a real performance. Reference line indicates the lowest performance price stated by participants who faced a real performance. *Note.* Performance prices are back-transformed averages of natural log transformed individual prices.

underestimated their own performance prices ($M = \$11.24$) compared with participants who faced a real performance ($d = .43$, $t[171] = 2.85$, $p = .005$, 95% C.I. $= \$1.16–\$2.22$). Furthermore, a mediation analysis (Baron & Kenny, 1986) indicated that the impact of the real or hypothetical nature of the performance on participants' own performance prices ($\beta = .21$) mediated the impact of the nature of the performance on participants' predictions of others' performance prices. The correlation between the reality of the performance and predictions of others' performance prices was reliably reduced (from $\beta = .15$ to $\beta = .01$, $Z = 2.74$, $p = .006$), via a Sobel (1982) test, when participants' own performance prices were included in a multiple regression ($\beta = .64$, $t[170] = 10.72$, $p < .001$).

A similar pattern emerged for participants' predicted and actual decisions of whether they would perform for $5. The fraction of participants who faced a real performance that were willing to mime (15.12%) was overestimated both by participants who faced a hypothetical performance ($M = 43.33\%$, $d = 2.62$, $t[86] = 12.05$, 95% C.I. $= 23.56–32.87\%$) and by those who faced a real performance themselves ($M = 38.74\%$, $d = 2.20$, $t[85] = 10.15$, 95% C.I. $= 19.00–28.25\%$). As well, participants who faced a hypothetical performance predicted that a greater fraction of other students would agree to mime compared with participants who faced a real performance, although the difference was not reliable ($d = .21$, $t[171] = 1.39$, 95% C.I. $= -1.93–11.10\%$). Finally, replicating our previous research, participants who faced a hypothetical performance were more likely to predict that they would mime ($M = 31.03\%$) compared with the

fraction of participants who actually agreed to mime ($M = 15.12\%$, $\phi = .19$, $\chi^2[1, N = 173] = 6.17$, $p = .013$).

These results demonstrate the illusion of courage in social predictions and suggest that it stems from the combination of two judgmental biases. First, participants who faced a purely hypothetical performance predicted that others would be more willing to perform than participants who faced a real performance, implying that the illusion of courage in self-predictions contributed to the illusion of courage in social-predictions. Consistent with this thesis, the impact of facing a real or hypothetical performance on participants' own willingness to perform (the vertical solid arrow in Fig. 1) statistically mediated the impact of the reality of the performance on their predictions of others' willingness to perform. Second, participants generally overestimated how willing other people would be to engage in an embarrassing public performance, regardless of whether participants themselves faced a real or hypothetical performance (the horizontal solid arrow in Fig. 1).

Experiment 2: Dancing

We designed Experiment 2 with two goals in mind. The first was to replicate the primary results of Experiment 1 in a slightly different setting with somewhat different measures. We asked people to indicate how willing they would be to dance in front of an audience in exchange for money. People were also asked to take the perspective of a specific, randomly selected individual, rather than a group of other individuals as in Experiment 1, and to predict that individual's willingness to dance for money. The performance was potentially real for some people and purely hypothetical for others. We expected both groups of people to overestimate others' willingness to dance. We also expected that people facing a hypothetical performance would be more likely than those facing a real performance to predict that others would perform, and that this difference in social predictions would mirror and be mediated by a corresponding difference in self-predictions.

Our second goal was to examine the extent to which predictions of others' willingness to perform are correlated with predictions of one's own willingness to perform versus estimates of others' thoughts about the costs and benefits of performing. Repeating a procedure used in our other research (Van Boven et al., 2004), people were asked to report how much they thought about two factors when they decided whether to dance: being evaluated by other people, and the money they could earn. People were also asked to estimate how much the other person thought about the same two factors when deciding whether he or she would dance. These two factors emerged during the debriefing of our previous studies, including Experiment 1, as the major costs and benefits

people consider when deciding whether to perform in exchange for money. Because being evaluated by others is, intuitively, more closely associated with the emotions aroused by facing public performances than the money one could earn, facing a real and immediate performance causes people to think less about the money relative to being socially evaluated (Van Boven et al., 2004). We therefore expected that people facing a real performance would focus more on being evaluated by their peers relative to the money they could earn, and that this emotional focusing would mediate the illusion of courage in self-predictions.

Of greater import for the present investigation, we expected that people's predictions of others' willingness to perform would be more closely associated with their own willingness to perform than with people's estimates of others' thoughts about the relative costs and benefits of performing. Our dual judgment model of emotional perspective taking implies that predictions of others' preferences and decisions are based primarily on predictions of one's own preferences and decisions. Thus, although we expected people to project onto others their own thoughts about being evaluated and the money they could earn, we did not expect people's estimates of others' thoughts to be independently associated with people's predictions of others' willingness to perform. This pattern would provide strong support for our assertion that predictions of one's own preferences and decisions form the basis of emotional perspective taking.

Method

University undergraduates in a large lecture class ($N = 270$) participated as part of a class exercise. Upon entering the classroom, a large auditorium with an elevated stage in front, students were given an instruction packet and questionnaires to read and complete while they listened to Rick James' 1981 song "Super Freak." As in Experiment 1, participants were given green or white sheets of paper randomly assigning them to either the real ($n = 135$) or hypothetical ($n = 135$) performance condition. Participants in the real performance condition read the following:

Students with green sheets of paper like you have the option of dancing by themselves in front of the class for a payment of $5. The instructor will randomly select some of the students with green sheets who have agreed to dance to do so. Those students will dance, one at a time, for one minute, to the song "Super Freak," by Rick James. Notice that because not everyone who indicates he or she will dance will be called upon to do so, no one will notice if you choose not to dance.

The instructions given to participants in the hypothetical performance condition were identical, except they

were printed on white paper, and specified that there was no possibility of their dancing. Both groups read that half of the students faced a real performance and half faced a hypothetical performance.

Participants were asked to state the smallest amount of money they would have to be paid to dance, and to indicate whether they would dance for $5. Participants were also asked to consider another anonymous, "randomly selected" participant in the real performance condition, to predict that participant's lowest performance price, and to predict whether that participant would dance for $5. The order of the two questions pertaining to participants themselves and to the other participant was counterbalanced, had no reliable effect, and is not discussed further.

Participants were next asked how much they thought about two factors when indicating their willingness to perform: "How much did you think about how you would be evaluated by the other students?" and "How much did you think about the $5 you would earn?" They answered both questions on scales ranging from 1(*not at all*) to 9(*a great deal*). Participants also estimated on identical scales how much the participant whose performance price and choice they predicted had thought about each factor. Participants' completed questionnaires were collected, the experimenter selected ten willing participants from the real performance condition to dance, and everyone was debriefed.

Results

Because performance prices were positively skewed, as in Experiment 1, we performed natural log transformations before analyzing the data, but present back-transformed averages for interpretational ease. We excluded from all analyses the nine participants (six in the hypothetical performance condition and three in the real performance condition) who stated inconsistent performance prices and decisions, either for themselves or for the other participant (resulting $N = 261$).

Willingness to perform. Replicating the illusion of courage in social predictions, participants overestimated others' willingness to dance; this overestimation was greater among participants who faced a hypothetical performance than among those who faced a real performance (see Fig. 3). The performance price stated by participants who faced a real performance ($M = \$52.88$) was underestimated both by participants who faced a hypothetical performance ($M = \$12.71$, $d = .71$, $t[250] = 5.63$, 95% C.I. = \$2.39–\$6.09) and by those who faced a real performance themselves ($M = \$19.22$, $d = 1.06$, $t[119] = 5.79$, 95% C.I. = \$1.91–\$3.72).[1] Also, participants who faced a
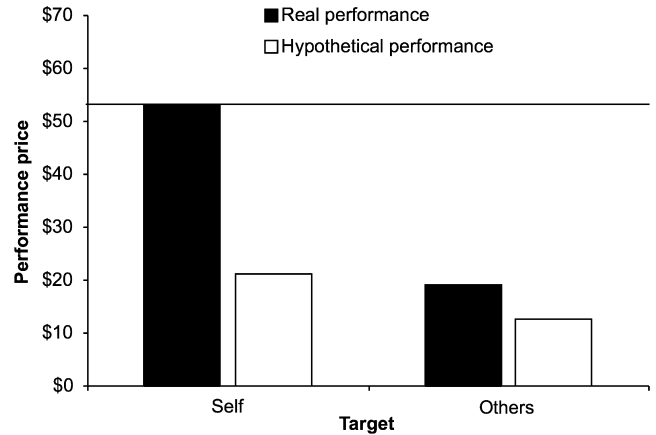

Fig. 3. Experiment 2: Dancing. For participants who faced a hypothetical and real performance, their own lowest performance price, and their estimate of the lowest performance price of another individual participant who faced a real performance. Reference line indicates lowest performance price stated by participants facing a real performance. *Note.* Performance prices are back-transformed averages of natural log transformed individual prices.

hypothetical performance predicted others' performance prices would be lower than did participants who faced a real performance ($d = .29$, $t[250] = 2.30$, 95% C.I. = \$1.05–\$1.92). Finally, participants who faced a hypothetical performance underestimated what their own performance prices would be ($M = \$21.07$) compared with participants who faced a real performance ($d = .42$, $t[248] = 3.32$, 95% C.I. = \$1.42–\$3.94).

A similar pattern emerged for participants' predicted and actual choices. The fraction of students that agreed to dance when they faced a real performance (8.33%) was overestimated by participants who faced a hypothetical performance ($M = 35.66\%$, $\phi = .33$, $\chi^2[1, N = 261] = 28.54$, $p < .001$) and by participants who faced a real performance themselves ($M = 31.01\%$, McNemar $N = 132$, $p = .021$). As with performance price predictions, participants who faced a hypothetical performance were more likely than participants who faced a real performance to predict that others would choose to dance ($\phi = .23$, $\chi^2[1, N = 261] = 13.34$, $p < .001$). Additionally, participants who faced a hypothetical performance were more likely to predict that they themselves would choose to dance ($M = 31.01\%$) compared with the fraction of participants who actually chose to dance ($\phi = .29$, $\chi^2[1, N = 261] = 21.34$, $p < .001$). These results replicate the illusion of courage in social- and self-predictions.

Emotional focusing. As expected, participants who faced a hypothetical performance reported thinking about the money to be earned versus being evaluated by others more than did participants who faced a real performance (see the left side of Fig. 4). And, as expected, participants projected this shift in focus onto others' thoughts (see the right side of Fig. 4). We submitted

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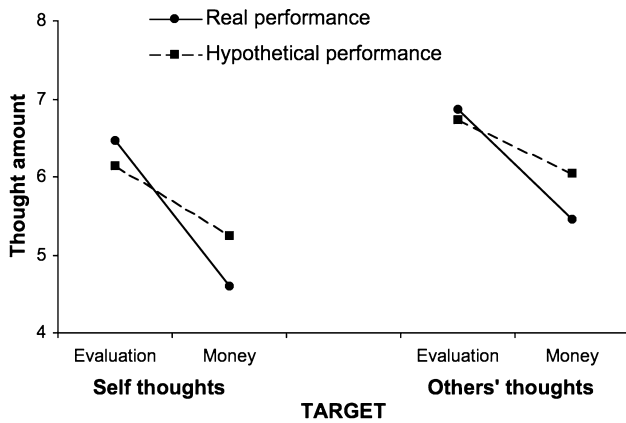[1] Because of missing data, degrees of freedom vary between tests.

Fig. 4. Experiment 2: Dancing. For participants who faced a hypothetical and real performance, their own thoughts about being evaluated and the money they could earn, as well as their estimate of how much another participant thought about the same two factors.

participants' thought ratings to a 2(thought: evaluation vs. money) × 2(target: self vs. others) × 2(performance: hypothetical vs. real) mixed model Analysis of Variance (ANOVA), with repeated measures on the first two factors. This analysis yielded the expected interaction between thoughts and performance ($\eta^2 = .023$, $F[1, 258] = 6.09$, 95% C.I. = .16–1.47). None of the other interactions were reliable (all F's < 2.29). We next analyzed separately participants' reports of their own thoughts and their predictions of others' thoughts with two 2(thought: social evaluation vs. money) × 2(performance: hypothetical vs. real) mixed-model ANOVAs. The expected interaction was reliable both for participants' own thoughts ($\eta^2 = .017$, $F[1, 258] = 4.53$, 95% C.I. = .07–1.84), and their predictions of others' thoughts ($\eta^2 = .017$, $F[1, 258] = 4.39$, 95% C.I. = .04–1.32).

Paths of courage. Our analysis of the illusion of courage in social predictions implies two paths of mediation. First, as in our other research (Van Boven et al., 2004), the impact of facing a real or hypothetical performance on participants' willingness to engage in embarrassing performances should be at least partially mediated by their increased focus on being socially evaluated relative to the money. Second, the impact of facing a real or hypothetical performance on predictions of others' willingness to perform should be mediated by participants' own willingness to perform—and not by participants' estimates of others' focus on social evaluation.

We examined these predictions simultaneously with the structural equation modeling (SEM) program within the AMOS procedure.[2] Because our analysis of emotional focusing implies that facing a real perfor-
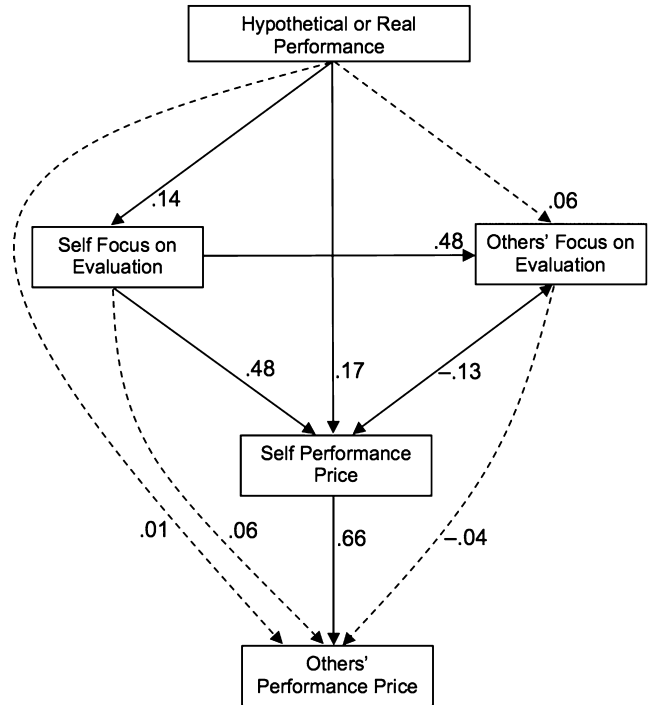

Fig. 5. Experiment 2: Dancing. Structural equation model of participants' own lowest performance price and their estimate of another participant's lowest performance price. Solid lines represent statistically reliable associations (*p*s < .05); dashed lines represent non-reliable associations. Numbers are standardized regression weights.

mance increases thoughts about evaluation relative to thoughts about money, we first created two indices of emotional focusing, one for participants' own thoughts and one for their predictions of others' thoughts. We subtracted participants' ratings of thoughts about the money from their ratings of thoughts about being evaluated by other people. Higher numbers on each index indicate a greater focus on being evaluated by others relative to the money. We then included five measures in the SEM analysis: (a) a binary variable indicating whether participants were in the hypothetical or real performance condition (coded 0 or 1, respectively), (b) the difference score indexing participants' focus on being evaluated by their peers, (c) the difference score indexing participants' belief about others' focus on being evaluated by their peers, (d) participants' own performance price (natural log transformed), and (e) their estimate of the other participants' performance price (natural log transformed).[3]

The fully saturated model is displayed in Fig. 5. Statistically reliable and non-reliable correlations in the model, each controlling for all other correlations, are represented by solid and dashed arrows, respectively.

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[2] This analysis includes the 240 participants who provided all relevant data.

[3] We used performance prices rather than decisions as the key dependent measures in this model because prices are a more sensitive index of participants' willingness to perform.

The pattern of correlations is consistent with both mediational hypotheses.[4]

Consider first participants' own performance price. Whether participants faced a hypothetical or real performance (Hypothetical or Real Performance) is reliably correlated with their own focus on being evaluated (Self Focus on Evaluation, $Z = 2.10$, $p = .036$) and with their lowest performance price (Self Performance Price, $Z = 2.86$, $p = .004$). Participants' own focus on evaluation is strongly correlated with their own performance price ($Z = 7.18$, $p < .001$). (Participants' performance price is also unexpectedly correlated with their prediction of other participants' focus on evaluation, $Z = 1.98$, $p = .046$.) Furthermore, there is a reliable indirect path from the hypothetical or real performance to participants' focus on evaluation to their own predicted performance price ($Z = 2.02$, $p = .044$, Sobel, 1982). This pattern replicates our previous finding that participants' focus on evaluation partially mediated the illusion of courage in self-predictions.

Next, consider participants' predictions of other participants' performance price (Others' Performance Price). This prediction is reliably correlated only with participants' own performance price ($Z = 11.94$, $p < .001$). None of the other variables in the model is reliably correlated with participants' predictions of others' performance prices (all Zs < 1), not even participants' estimates of the other participant's focus on evaluation (Others' Focus on Evaluation). This is rather striking given that participants' own focus on evaluation was closely correlated with their own performance price. Thus, participants' own performance price—but not their estimates of others' thoughts—statistically mediated the impact of the real versus hypothetical nature of the performance on participants' predictions of others' performance prices.[5] Participants' predictions of others' willingness to engage in an embarrassing performance, this analysis suggests, were based primarily on their own willingness to perform, not on any judgment about others' thoughts.

Discussion

The results of Experiment 2 replicated the illusion of courage in social predictions. People generally overestimated how willing other people would be to dance in front of an audience. This overestimation was pronounced among people who faced a purely hypothetical

performance compared with those who faced a potentially real performance, a pattern that mirrored people's overestimation of their own willingness to perform. Compared with those who faced a hypothetical performance, people who faced a real performance reported thinking about, and predicted others would think about, being evaluated by their peers more than the money to be earned.

Inspection of Fig. 4 reveals that this shift in focus occurred mainly because of changes in thoughts about money. Regressions estimating the thoughts about money revealed reliable effects of the type of performance, both for participants' own thoughts ($\beta = -.13$, $t[258] = 2.03$, $p = .044$), and for their estimates of others' thoughts. ($\beta = -.14$, $t[258] = 2.23$, $p = .026$). Regressions estimating the thoughts about evaluation failed to reveal reliable effects of the type of performance for participants' own thoughts ($\beta = .08$, $t[258] = 1.28$, $p = .203$) and for their estimates of others' thoughts ($\beta = .04$, $t < 1$). This pattern of results is consistent with our other findings (Van Boven et al., 2004), and suggests that emotional focusing is primarily caused by decreased attention to non-emotional information, rather than by increased attention to emotional information.

In any event, the key point of Experiment 2 is that the predictions of others' willingness to engage in an embarrassing public performance is reliably correlated only with predictions of one's own willingness to perform. According to our model, people's predictions of others' preferences and decisions in emotional situations—in this case, facing an embarrassing public performance—are based on their predictions of what their own preferences and decisions would be in those situations. Consistent with this thesis, a structural equation model indicated that predictions of others' willingness to engage in an embarrassing performance were correlated only with participants' predictions of their own willingness to engage in an embarrassing performance. Participants' predictions of what other people thought about were not independently correlated with their predictions of others' preferences.

General discussion

Predicting how emotions impact others' preferences and decisions is a particularly important but also particularly difficult task of everyday social life. The two experiments presented here demonstrate that such emotional perspective taking falls short when it comes to embarrassing situations. People systematically underestimate the impact on others' preferences and decisions of fear of embarrassment. People underestimated how willing other people would be to mime (Experiment 1) and dance (Experiment 2) in front of an audience. This illusion of courage emerged both when people made

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[4] We also conducted a SEM including only the associations implied by our hypotheses, all of which remained reliable (all Zs > 2.4, all ps < .01). The restricted model fit the data well (comparative fit index = .99), and the fully saturated model does not fit the data reliably better than the restricted model ($\chi^2[5, N = 240] = 6.07$, $p = .299$).

[5] According to Cohen and Cohen (1983) for analyses of two or more mediating variables, a reasonable substitute for an exact significance test is whether all of the component path coefficients are significant.

predictions about groups of people (Experiment 1) and about specific others (Experiment 2).

Two judgmental biases produce the illusion of courage in social-predictions. First, and most important, people base their social predictions on predictions of what their own preferences and decisions would be in emotionally arousing situations. Because people underestimate the impact of being in an embarrassing situation on their own preferences and decisions (Van Boven et al., 2004), they also underestimate the impact of being in an embarrassing situation on others' preferences and decisions. Consistent with this thesis, the impact of facing a real or hypothetical performance on participants' predictions of others' willingness to perform was statistically mediated in both experiments by the impact of facing a real versus hypothetical performance on participants' predictions of their own willingness to perform. And in Experiment 2, a SEM indicated that predictions of others' willingness to perform was independently correlated only with self-predictions, and not with estimates of others' focus on being evaluated by their peers. These results suggest that predictions of others' preferences in embarrassing situations are not based on coherent mental representations of others' thoughts and preferences, but at least partly on a (biased) representation of one's own preferences.

The second judgmental bias responsible for the illusion of courage in social predictions is an enduring intuitive belief that others are less influenced by fear of embarrassment than themselves (Miller & McFarland, 1987; Sabini et al., 1999). As a result, people generally expect others to be more willing than themselves to engage in embarrassing performances. Indeed, participants in both experiments overestimated how willing other people would be to engage in an embarrassing performance, whether or not participants themselves faced a real or hypothetical performance.

The results of these experiments were anticipated by and provide support for a dual judgment model of emotional perspective taking (Van Boven & Loewenstein, 2003, in press-a, in press-b). According to this model, represented by the solid arrows in Fig. 1, people's prediction of others' preferences and decisions in emotional situations is the result of two distinct judgments: (a) people's prediction of what their own preferences and decisions would be in an emotional situation, and (b) adjustments to this prediction to accommodate perceived differences between self and others. The results of our experiments provide a more precise test of this model by simultaneously showing that people use themselves as basis for predicting others' willingness to engage in an embarrassing performance (the vertical solid arrow in Fig. 1), and that people generally believe that others' are more willing than themselves to engage in an embarrassing performance (the horizontal solid arrow in Fig. 1).

The results of our experiments echo a central theme in social judgment: People's judgments are egocentric and the self is the gravitational center of social cognition (Dunning & Cohen, 1992; Dunning & Hayes, 1996; Heider, 1958; Ichheiser, 1946; Krueger, 1998; Sherif & Hovland, 1961). In both experiments, people's predictions of others' willingness to engage in an embarrassing performance were based largely on their own willingness to perform. The egocentric nature of social judgment follows largely from people's assumption that, because their perceptual and emotional apparatus is for the most part similar to others' perceptual and emotional apparatus, other people will experience similar reactions as the self (Griffin & Ross, 1991; Ross & Ward, 1995). Because of such "naive realism," people attribute their reluctance to perform partly to the inherent properties of the choice, implying that others will exhibit a similar reluctance.

Our results also echo another theme in social judgment, seemingly inconsistent with egocentrism, that, compared with others' experience, one's own experience is unique (Campbell, 1986; Katz & Allport, 1938; Prentice & Miller, 1996; Snyder & Fromkin, 1977; Suls & Wan, 1987). In both of our experiments, people generally expected others to be more willing to perform than themselves. That people simultaneously judge others to be both similar and dissimilar to the self reflects the simultaneous operation of conflicted psychological processes (cf., Monin & Norton, 2003; Sabini et al., 1999). On the one hand, people experience public performances as inherently embarrassing and undesirable, both to the self and to others. One the other hand, people believe that others react to embarrassing situations somewhat differently than the self.

An important question for future research is whether these two processes—egocentrism and perceived uniqueness—differ in priority or effort. Do people initially assume that others' reactions are similar to their own before effortfully accounting for potential differences between oneself and others? Or do people initially assume that their reactions are unique before accounting for the commonality of their own and others' emotionality?

The results of our experiments, and of our model more generally, also raise the question of whether and in what way perspective taking across different emotional situations differs from perspective taking across different non-emotional situations. To be sure, similar egocentric biases in perspective taking across both emotional and non-emotional situations imply overlap in the processes underlying emotional and non-emotional perspective taking (Van Boven & Loewenstein, in press-a, in press-b). As mentioned earlier, recent research indicates that perspective taking across different non-emotional situations entails using the current self as an anchor from which one adjusts to accommodate simultaneously differences between situations and between the self and others (Epley et al., 2004; Nickerson, 1999, 2001).

By contrast, our model and the results of our experiments suggest that emotional perspective taking entails two distinct judgments, one of which is a prediction of how the self would react to being in a different emotional situation. These two processes do not exhaust the possible perspective taking processes, are not inherently inconsistent, and may vary in their relative influence across perspective taking contexts. It may be, for example, that when perspective taking across emotional situations, using self-predictions as a basis for predicting others is intuitively more appealing—and may even be automatic (Hodges & Wegner, 1997)—than when perspective taking across non-emotional situations.

In conclusion, our findings provide support for a recent assertion that underestimating fear of embarrassment is a major cause of biased and erroneous social judgment (Sabini et al., 2001). More generally, to the extent that people underestimate the impact of transient emotions on the self, others' emotionally induced behaviors may be misinterpreted as stemming from enduring dispositions (Gilbert & Mallone, 1995; Jones, 1990; Ross, 1977). We believe that people's underestimation of the power of emotion is a fundamental error in social judgment.

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