Research Article

Knowing Too Much

Using Private Knowledge to Predict How One Is Viewed by Others

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ABSTRACT—*People have more information about themselves than others do, and this fundamental asymmetry can help to explain why individuals have difficulty accurately intuiting how they appear to other people. Determining how one appears to observers requires one to utilize public information that is available to observers, but to disregard private information that they do not possess. We report a series of experiments, however, showing that people utilize privately known information about their own past performance (Experiments 1 and 2), the performance of other people (Experiment 3), and imaginary performance (Experiment 4) when intuiting how they are viewed by others. This tendency can help explain why people's beliefs about how they are judged by others often diverge from how they are actually judged.*

People devote considerable attention to wondering (and, at times, worrying) about how they appear in the eyes of others. Despite this attention, people's beliefs about how others view them are often mistaken (Gilovich & Savitsky, 1999; Kenny & DePaulo, 1993). For example, several investigations have demonstrated that people overestimate the extent to which observers judge them harshly after a failure or embarrassing blunder, and that this miscalibration stems partly from people's failure to consider information that observers take into account. People account insufficiently for observers' tendency to empathize and commiserate with those who commit embarrassing blunders (Epley, Savitsky, & Gilovich, 2002); they do not consider "nonfocal" information as fully as observers do (Savitsky, Epley, & Gilovich, 2001); and they fail to account for observers' tendency to adjust their inferences to reflect mitigating situational constraints (Van Boven, Kamada, & Gilovich, 1999).

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The research we report in this article explored the inverse notion: that difficulties intuiting how one is viewed by observers are produced not only by failing to consider information considered by observers, but also by actively utilizing information that observers fail to consider (indeed, have no access to). Beliefs about how one is perceived can be biased by a tendency to evaluate one's own performance in light of contextual information that is unavailable to observers, and then to use this self-evaluation as a guide for intuiting their impressions. A woman may know, for example, that she is less fit than she used to be, more attractive than most of her friends, and less productive than she might wish. Acquaintances who know nothing of her past, her friends, or her wishes, however, can hardly use such comparisons when forming their impressions, and instead can base their impressions only on information that is currently available to them. And yet, like jurors who find it difficult to disregard inadmissible evidence once it has been provided, people may find it difficult to disregard what they know is private information when intuiting how others view them. Private knowledge, like inadmissible testimony in court, can influence how people encode and evaluate an event so profoundly that correcting for the private nature of this information can prove difficult, if not impossible. This difficulty can help explain why people err in estimating how they appear in the eyes of others.

The influence of private information may be a particularly powerful determinant of error in daily life because of a basic asymmetry in the amount of information people possess about themselves versus the amount that others possess about them (Nisbett, Caputo, Legant, & Marecek, 1973). People have privileged access to their own internal thoughts and feelings, and observe themselves across time, continuously from one moment to the next, but they are viewed by others in isolated episodes. An individual therefore experiences events in his or her own life within a rich situational context that allows each event to be understood in light of information that is often unavailable to others. When this private information is discrepant with one's public performance—which *is* available to others—there is likely to be

a divergence between how one expects to be judged and how one is actually judged. Consider a speaker who delivers the same lecture on two consecutive evenings. Although he or she can compare performances from one night to the next, audience members cannot. The speaker is therefore likely to overestimate how positively the second lecture will be evaluated if it seems better than the first, but to overestimate how negatively it will be evaluated if it seems worse.

This hypothesis calls to mind several supportive findings. First, considerable evidence suggests that people consult their own mental states as a proxy for other people's mental states (Epley, Keysar, Van Boven, & Gilovich, 2004; Kahneman & Lovallo, 1993; Meltzoff & Brooks, 2001; Nickerson, 1999). This ego-centrism can lead individuals to overestimate the extent to which others have access to their internal thoughts and personal attributes (Gilovich, Savitsky, & Medvec, 1998; Savitsky & Gilovich, 2003; Vorauer & Ross, 1999), as well as the extent to which others share their beliefs and subjective perceptions (Keysar, 1994; Ross, Greene, & House, 1977). Because people often have little awareness of how contextual information has influenced how they encode and evaluate events, they may make little effort to undo such influence when intuiting other people's impressions (Brenner, Rottenstreich, & Sood, 1999; Fischhoff, 1975; Hsee, 1996; Hsee & Zhang, 2004). Even when contextual influence is rendered obvious, individuals' attempts to correct their egocentrically encoded judgments tend to be insufficient (Epley et al., 2004; Keysar & Barr, 2002).

Second, our hypothesis resonates with research showing that more information can, ironically, decrease accuracy (Hall, Ariss, & Todorov, 2007). Indeed, it is often knowledge individuals have about *themselves* that undermines the accuracy of their self-related judgments (Buehler, Griffin, & Ross, 1994; Epley & Dunning, 2000, 2006). We argue here that individuals' private knowledge of the context in which their performances occur can bias their beliefs about how others view them. In other words, we suggest that people have difficulty knowing how they are viewed by others because they simply know too much about themselves.

EXPERIMENT 1

Few public performances occur without prior practice, and these practice sessions can serve as a private standard of comparison against which one evaluates one's subsequent performance. A best man at a wedding may rehearse his toast until he can deliver it flawlessly, but if he falls short in the moment of truth (perhaps calling the bride by the name of the groom's former girlfriend), his self-evaluation may be all the harsher because of his comparison between how the toast sounded in private and how it sounded in public. Although such comparisons may color one's own appraisal of one's performance, they obviously cannot influence how one is judged by people who were absent during one's private rehearsals. Nevertheless, we predicted that participants' private performance would influence their self-evaluation of their

public performance, which would in turn influence how they believed their public performance would be viewed by others.

Method

University of Iowa undergraduates ($N = 141$) participated in groups of 2 to 4. Each group learned that one of them (the actor) would play a game of darts while the others (observers) waited elsewhere. After the actor played a first, private round of darts, the experimenter retrieved the observers and sat them behind the actor, where they served as an audience for a second, public round of darts.[1]

Actors then predicted how *skillful* observers believed they were at darts, how *impressed* observers were with their performance, and how *satisfied* they themselves were with their public performance, all on scales from 0 (*not at all*) to 10 (*very*). They also rated how their public performance compared with their expectations, from 0 (*much worse*) to 10 (*much better*). Observers made parallel ratings about the actor's skill level and how impressed they were with the actor's performance.

Results and Discussion

The extent to which actors performed better in the public than in the private round was correlated with their reports of doing better than they expected ($r = .58$, $p_{rep} = .99$), and also with their satisfaction with their public performance ($r = .38$, $p_{rep} = .93$). More important, actors' self-assessments were also correlated with how they expected to be evaluated by observers. We averaged actors' two predictions of observers' ratings ($r = .84$, $p_{rep} = .99$) and found that those actors who performed better than they expected anticipated higher ratings from observers than did those who performed worse than expected, even when we controlled for actual scores on the public round of darts ($r = .52$, $p_{rep} = .99$). Actors who felt a subjective sense of improvement from the private to the public round expected relatively charitable ratings from observers, regardless of how well they had performed in the public round—which was, of course, the only performance available to observers. This conclusion is underscored by the mediational analysis depicted in Figure 1: Although actors' predictions of observers' impressions were correlated with objective changes in actors' performance, this relation was fully mediated by actors' subjective sense of improvement, Sobel $z = 2.20$, $p_{rep} = .91$.

Although the ratings actors anticipated were related to their subjective feelings of improvement across the two rounds, observers' evaluations were related only to scores in the public round, $r = .54$, $p_{rep} = .99$, and, notably, were unrelated to actors' subjective feelings of improvement, $r = .08$, $p_{rep} = .42$. Averaging observers' two ratings ($r = .83$, $p_{rep} > .99$) revealed that actors generally expected to be evaluated more harshly ($M = 3.61$) than they actually were ($M = 4.87$), $t(46) = 4.10$, $p_{rep} =$

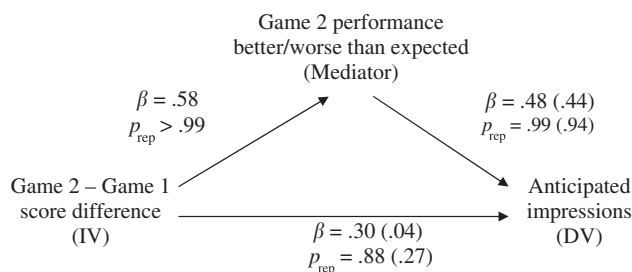[1]There was only a single observer in 15 of the sessions.

Fig. 1. Mediational analysis for Experiment 1. Standardized betas are reported, along with corresponding p_{rep} values. Coefficients in parentheses indicate the relationship between the proposed mediator and the dependent variable (DV) and between the independent variable (IV) and the dependent variable, simultaneously controlling for the mediator and the independent variable.

.99, $d = 0.60$, a finding that is consistent with past research (Epley et al., 2002; Savitsky et al., 2001).

To bolster support for the main conclusions of Experiment 1, we conducted a conceptual replication in which we manipulated participants' private comparisons experimentally, rather than simply measuring them. Forty-seven University of Iowa students were given two versions of a bogus test of social intelligence. After taking the first (private) test, approximately half of the students were told that they had answered 5 of the 20 items correctly, and half were told that they had answered 17 correctly. All participants were then videotaped as they took a second (public) test and were informed that they had answered 11 out of 20 items correctly. Finally, participants predicted how they would be evaluated by an observer who viewed their videotape; specifically, they indicated how socially skilled the observer would rate them, on a scale from -5 (*not at all*) to $+5$ (*very*). As anticipated, participants who believed they had improved from their private to their public performance expected to be evaluated more favorably than did participants who believed their performance had declined (Ms = 1.38 vs. 0.48), $t(45) = 2.18$, $p_{rep} = .90$, $d = 0.67$, even though they knew that an observer would know nothing about these changes. Figure 2 shows that this difference in anticipated impressions was fully mediated by
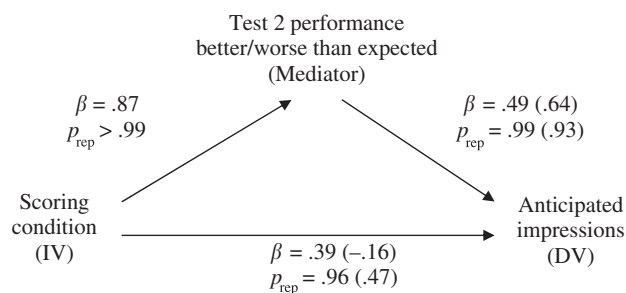

Fig. 2. Mediational analysis for the conceptual replication of Experiment 1. Standardized betas are reported, along with corresponding p_{rep} values. Coefficients in parentheses indicate the relationship between the proposed mediator and the dependent variable (DV) and between the independent variable (IV) and the dependent variable, simultaneously controlling for the mediator and the independent variable.

participants' subjective sense of improvement, Sobel $z = 2.35$, $p_{rep} = .93$.

EXPERIMENT 2

Participants in Experiment 1 overestimated how harshly they would be judged. Our hypothesis implies, however, that anticipated impressions may also be miscalibrated in the positive direction when a private context casts one's performance in a decidedly positive light. Experiment 2 put this idea to the test by manipulating participants' private information to induce a pronounced positive or negative comparison with a public performance.

Method

Harvard undergraduates ($N = 70$) participated individually as either singers or observers. Singers learned that they would sing two renditions of a 30-s clip from R.E.M.'s "It's the End of the World as We Know It (and I Feel Fine)," a pop song known for its rapid pace and challenging lyrics. They were told that their initial performance would be practice, but that their second performance would be recorded and played later for an observer. By random assignment, half of the singers were given the song's lyrics for their practice but not their public performance; the rest had the lyrics for their public performance but not their practice. When finished, singers predicted how observers would rate their public performance on *pitch*, *clarity*, and *overall quality*, and evaluated the *overall quality* of both performances in their own eyes. All judgments were made on scales from 1 (*very poor*) to 11 (*very good*).

Observers evaluated singers' public performance on *pitch*, *clarity*, and *overall quality*, also on scales from 1 (*very poor*) to 11 (*very good*).

Results and Discussion

We collapsed observers' three evaluations ($\alpha = .86$) and singers' predictions of those evaluations ($\alpha = .78$) into composite indices. As Figure 3 shows, singers who possessed the lyrics during their public performance expected their performance to be evaluated more favorably than did those who did not have the lyrics during their public performance, $t(33) = 2.77$, $p_{rep} = .95$, $d = 0.96$. This difference in anticipated evaluations was not, however, matched by a comparable difference in observers' actual evaluations, $t(33) < 1$. Although singers regarded their public performance more highly when they had the benefit of lyrics than when they did not (see the next paragraph), and expected observers' evaluations to reflect this appraisal, observers' evaluations were not influenced by a comparison standard to which they had no access. Consequently, singers who possessed the lyrics during their public performance overestimated how positively they would be evaluated, paired $t(20) = 2.32$, $p_{rep} = .91$, $d = 1.04$, and singers who instead possessed the lyrics during their private performance (marginally) overestimated
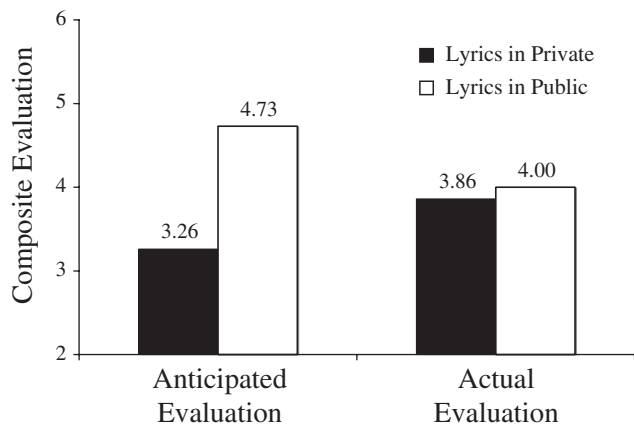
Fig. 3. Anticipated and actual evaluations of singers in Experiment 2, as a function of whether the singers had the lyrics during their private performance (practice) or during their subsequent public performance.

how negatively they would be evaluated, paired $t(13) = -1.77$, $p_{rep} = .82$, $d = 0.98$. This pattern was confirmed by a 2 (singer vs. observer) × 2 (lyrics in private vs. in public) analysis of variance (ANOVA), which yielded a significant interaction, $F(1, 33) = 7.86$, $p_{rep} = .96$, $d = 0.98$.

Singers rated their own performance with lyrics ($M = 4.80$) higher than their performance without lyrics ($M = 1.74$), paired $t(34) = 8.34$, $p_{rep} = .99$, $d = 2.86$. Although singers' self-evaluations were not related to observers' actual impressions, $\beta = .15$, n.s., they *were* related to singers' predictions of those impressions, $\beta = .56$, $p_{rep} = .99$. As Figure 4 shows, self-evaluations fully mediated the effect of condition on anticipated impressions, Sobel $z = 3.49$, $p_{rep} = .99$.

EXPERIMENT 3

Experiment 3 was designed to test the generalizability of our results by examining whether people also utilize private social comparisons when predicting how others view them. Specifically, we manipulated whether the context was private (known only to participants) or public (said to be known to observers as
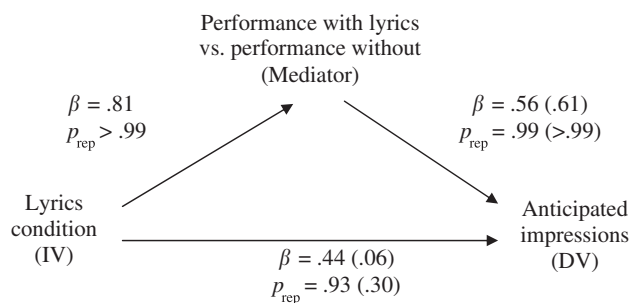

Fig. 4. Mediational analysis for Experiment 2. Standardized betas are reported, along with corresponding p_{rep} values. Coefficients in parentheses indicate the relationship between the proposed mediator and the dependent variable (DV) and between the independent variable (IV) and the dependent variable, simultaneously controlling for the mediator and the independent variable.

well) to explore whether participants would make allowance for the private nature of their comparisons.

Method
Williams College students participated in groups of 4 (in one case, 3) and were assigned to the public-context condition ($n = 18$), private-context condition ($n = 18$), or control condition ($n = 19$). First, participants were given 15 min to work individually on a word-find puzzle based on the game "Boggle." When they were done, participants counted the words they had located and recorded that number on the puzzle. Participants in the control condition then predicted how *bright*, *clear-minded*, and *intelligent* an observer would rate them, on scales from 0 (*not at all*) to 10 (*extremely*). They also predicted how the observer would rate their performance and "overall 'Boggle' ability," from 0 (*very poor*) to 10 (*excellent*), and how the observer would rate them in comparison with other Williams College students, from −5 (*far below average*) to +5 (*far above average*).

In the public- and private-context conditions, the experimenter collected participants' puzzles and excused himself "to make photocopies." When he returned, he handed each participant a packet of photocopied puzzles and explained that they belonged to all the participants in that session. In reality, the final puzzle in the packet was the participants' own, but the others had been prepared by the experimenter ahead of time, each in different handwriting. The bogus puzzles depicted exemplary performance at the task, casting participants' own performance in a negative light. Specifically, participants' counterparts were said to have found totals of 83, 80, and 88 words in their puzzles—a level of performance that, on the basis of pretesting, we believed would be impressive without being implausible. (By comparison, participants found an average of 25.1 words.) Participants in the public-context condition were told that one observer would evaluate all group members, whereas those in the private-context condition were told that each member of their group would be evaluated by a different observer. These participants then predicted how each member of their group would be evaluated, using the same scales as participants in the control condition used.

Results and Discussion
We added 5 points to participants' comparative-ability predictions (to match the other scales) and averaged across the measures to form a composite index of participants' thoughts of how they would be evaluated by the observer ($\alpha = .96$). A one-way ANOVA on this index was significant, $F(2, 52) = 5.19$, $p_{rep} = .95$, $d = 0.63$. Planned comparisons indicated that participants in both the public-context condition ($M = 2.92$) and the private-context condition ($M = 3.00$) expected to be judged more harshly than did participants in the control condition ($M = 4.17$), $ts(52) = 2.93$ and 2.59, respectively, $p_{rep}s > .94$. Participants in the private-context condition expected observ-

ers' impressions of them to be affected by social comparisons to which the observers had no access, and expected to be judged every bit as harshly as did participants in the public-context condition, $t < 1$. Participants did not simply account insufficiently for the private nature of their context information; they failed to account for it at all.

EXPERIMENT 4

Experiment 4 investigated whether imaginary performances also provide a context for people to evaluate their own performances, such that imaginary performances influence people's expectations regarding how others view them. For example, one may imagine delivering an inspiring lecture before class has begun. This mental simulation may then influence one's self-evaluation, and subsequently affect how one expects to be evaluated by one's students.

Experiment 4 was also designed to demonstrate that private comparisons can induce assimilation effects in anticipated evaluations, and not simply contrast effects (as observed in Experiments 1–3). Imagined performances are more abstract than past performances and other people's performances, meaning that they are likely to provide an interpretive frame for judging subsequent performances, rather than a discrete event that can serve as a source of comparison (Stapel, 2007; Stapel, Koomen, & Velthuijsen, 1998; Stapel & Winkielman, 1998). In addition, participants in Experiment 4 were not asked to imagine relatively extreme behaviors that would have seemed discrepant with their actual performance. Instead, they imagined performances that were more similar to their actual performances, and were thus likely to serve as an interpretive frame and produce assimilation (Herr, 1986; Mussweiler, 2003). For these two reasons, we expected that participants who imagined a future performance would show an assimilation effect, rather than a contrast effect, in their anticipated evaluations. That is, we expected participants who imagined a positive performance to expect others to regard their actual performance especially positively (and participants who imagined a negative performance to expect others to regard their actual performance especially

negatively), even though imagined performances are clearly private events.

Method

University of Florida students ($N = 46$) engaged in informal, 6-min conversations in pairs. Participants were randomly assigned to one of three conditions before their conversations. Those in the imagine-favorable condition were asked to imagine behaviors that would create a desirable impression, those in the imagine-unfavorable condition were asked to imagine behaviors that would create an undesirable impression, and those in the control condition were not asked to imagine any behaviors. Participants in the imagine-favorable and imagine-unfavorable conditions spent a few minutes thinking about their imagined behaviors before the conversations began.

After their conversations, participants predicted their conversation partner's overall impression of them, on a scale from 1 (*very bad*) to 10 (*very good*). They also predicted how their partner would rate them on 10 adjectives (*humorous*, *charming*, *rude*, *friendly*, *boring*, *intelligent*, *honest*, *secretive*, *warm*, and *caring*), using scales from 0 (*not at all*) to 10 (*very*). Participants then rated their partner on the same scales. Finally, they indicated how they had imagined behaving before their conversation, from 1 (*very poorly*) to 10 (*very well*).

Results and Discussion

We converted participants' ratings to standard scores and created indices for how participants expected to be evaluated ($\alpha = .73$) and how they were actually evaluated ($\alpha = .76$; see Table 1).

Our instructions influenced participants' imagined performance, $F(2, 43) = 5.30$, $p_{rep} = .95$, $d = 0.70$. Those in the imagine-favorable and control conditions imagined more positive performances than did those in the imagine-unfavorable condition, ts(28 and 29) = 2.23 and 3.02, respectively, p_{rep}s > .90, ds > 0.82. Likewise, there was a difference in how participants expected to be evaluated, $F(2, 43) = 3.80$, $p_{rep} = .91$, $d = 0.59$. Those in the imagine-favorable and control conditions expected more positive appraisals than did those in the imagine-

TABLE 1

Mean Anticipated and Actual Evaluations by Condition in Experiment 4

Dependent measure	Condition		
	Imagine-favorable	Control	Imagine-unfavorable
Manipulation check			
Imagined behavior before conversation	0.17 (0.83)	0.42 (0.83)	−0.61 (1.07)
Evaluation			
Anticipated	0.17 (0.41)	0.10 (0.52)	−0.29 (0.54)
Actual	−0.12 (0.68)	0.07 (0.45)	0.04 (0.50)
Difference (anticipated − actual)	0.29 (0.65)*	0.03 (0.62)	−0.33 (0.69)*

Note. Standardized scores are reported. Standard deviations are given in parentheses. Average anticipated and actual evaluations are a composite of 10 trait ratings and 1 global rating ($\alpha = .73$ for anticipated, .76 for actual). Difference scores marked with an asterisk are significantly different from 0 (representing ''accuracy''), p_{rep}s > .82, ds > 0.45.
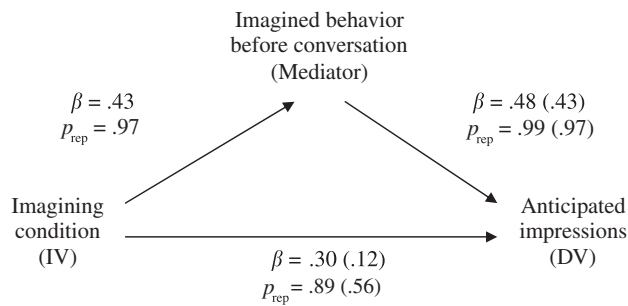
Fig. 5. Mediational analysis for Experiment 4. Standardized betas are reported, along with corresponding p_{rep} values. Coefficients in parentheses indicate the relationship between the proposed mediator and the dependent variable (DV) and between the independent variable (IV) and the dependent variable, simultaneously controlling for the mediator and the independent variable.

unfavorable condition, $ts(28$ and $29) = 2.62$ and 2.05, respectively, $p_{rep}s > .88$, $ds > 0.75$. Figure 5 shows that how participants imagined behaving prior to their discussion fully mediated the effect of condition on their anticipated ratings, Sobel $z = 2.15$, $p_{rep} = .91$.

Although imagined performances influenced anticipated impressions, they did not influence actual impressions, a pattern of results confirmed by a 3 (imagine-favorable vs. imagine-unfavorable vs. control) $\times$ 2 (anticipated vs. actual impressions) mixed-model ANOVA, which yielded a significant interaction, $F(2, 43) = 3.39$, $p_{rep} = .89$, $d = 0.56$. Control participants were relatively calibrated, imagine-favorable participants overestimated how charitably they would be judged, and imagine-unfavorable participants underestimated how charitably they would be judged (see Table 1).

Finally, note that this experiment casts doubt on an alternative interpretation of our previous results. It could be argued that participants used private-context information (e.g., their first darts score) to estimate what a typical performance might be, and then used *that* information to predict how others would view them. Although such a use of private information would not diminish the contribution of our results as an explanation for why people have difficulty intuiting how others view them, it would make people's use of private-context information appear more reasonable. Nevertheless, this alternative cannot account for the results of Experiment 4, in which imaginary performance carried no informational value, and in which the direction of our findings (assimilation) ran counter to this interpretation. Instead, imagined performances appeared to serve as an interpretive lens through which participants evaluated their own performance and thereby influenced how they expected to be evaluated by others.

GENERAL DISCUSSION

Events in an individual's life are experienced within a rich situational context that is often unavailable to others. We have shown that such private-context information—past performances (Experiments 1 and 2), performances of other people (Experiment 3),

and even imaginary performances (Experiment 4)—influences how people evaluate themselves and, in turn, how they expect to be evaluated by others. This can help to explain why people have such difficulty accurately intuiting others' impressions of them, despite repeated practice and strong motivation for accuracy.

We believe that there are two major reasons why people use private-context information in this way. First, private-context information appears to influence perceptions at the time of encoding, influencing self-evaluations in a way that makes it difficult for people to recognize the extent to which their self-assessments have been contaminated (Ross & Ward, 1996; Wilson & Brekke, 1994). Indeed, mediational analyses reported in this article demonstrate that private-context information influenced participants' self-evaluations, which in turn influenced participants' beliefs about how they would be judged by others. An additional unpublished study we conducted supports this interpretation. We attempted to alter how participants evaluated their current attractiveness by asking them about changes in their weight over the past year. They were asked this question either immediately before or immediately after they anticipated how attractive a group of observers would rate a full-body photograph taken of them *that* day. Only when these private changes were brought to mind before participants predicted observers' impressions did their subjective feelings of satisfaction with their current weight and satisfaction with changes in their weight over the past year correlate with their predictions (after we controlled for participants' actual weight), $rs(66) = .51$ and $.35$, respectively, $p_{rep}s > .99$; when participants were asked about changes in their weight after they predicted observers' impressions, the correlations between satisfaction and predicted attractiveness were nonsignificant, $rs(65) = .16$ and $.04$, n.s. (see also Strack, Martin, & Schwarz, 1988).

Second, even when the contaminating influence of private-context information can be identified, corrections intended to remove the contaminating influence may be insufficient. In such cases, people are likely to begin with their own self-assessments and then engage in a process of serial adjustment, terminating once they reach a plausible estimate of how their performance appears to observers. This process tends to result in judgments that are egocentrically biased (Epley et al., 2004; Gilbert & Gill, 2000).

Our analysis does not imply that people will always utilize private-context information when they attempt to determine how others view them. After all, alternative sources of information exist (e.g., stereotypes; Ames, 2004). Notably, our participants were asked to predict the judgments of strangers. In everyday life, however, how one expects to be judged by others undoubtedly depends on who those others are, and people's accuracy improves when they are predicting the judgments of close friends (Kenny & DePaulo, 1993)—perhaps because their friends share access to similar context information. Exploring factors that improve or diminish the accuracy of such judgments is a promising avenue for future research. In the meantime, readers may be well advised to remember that when it comes to being judged by others, "what they don't know can't hurt you."

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