

Egocentric Empathy Gaps Between Owners and Buyers: Misperceptions of the Endowment Effect

Leaf Van Boven and David Dunning
Cornell University

George Loewenstein
Carnegie Mellon University

In 5 studies, the authors examined people's perceptions of the *endowment effect*, or the tendency to value an object more once one owns it. In the 1st 2 studies, the authors documented *egocentric empathy gaps* between owners and buyers regarding the endowment effect: Both owners and buyers overestimated the similarity between their own valuation of a commodity and the valuation of people in the other role. The next 2 studies showed that these empathy gaps may lead to reduced earnings in a market setting. The final study showed that egocentric empathy gaps stem partly from people's misprediction of what their own valuation would be if they were in the other role.

A formula that will work wonders for you [is to] try honestly to see things from the other person's point of view.—Dale Carnegie, *How to Win Friends and Influence People*

Accurate perspective taking is widely recognized as an important ingredient of successful social interaction (Higgins, 1980; Ickes, 1997). Teaching, romantic relations, international diplomacy, business negotiations, and many other social relationships are benefited by an accurate view of other people's knowledge, beliefs, attitudes, and desires. But perspective taking is not easy. Even when people "try honestly to see things from the other person's point of view" they may miss their mark. Such empathic failures can produce misunderstanding and conflict.

We examined people's perspective-taking ability in the context of a particularly important social relationship: interactions between owners and buyers. Buying and selling is a cornerstone of social life and of modern society. Adam Smith wrote that "Every man [and woman] . . . lives by exchanging, or becomes in some measure a merchant, and the society itself grows to be what is properly a commercial society" (1776/1937, p. 22). Most people engage frequently in buying and, less frequently, selling, making offers for minor treasures at rummage sales, haggling over the price of a new Volkswagen Beetle at the car lot, or negotiating the price of a house. Accurate perspective taking can confer a significant advantage in such interactions (Neale & Bazerman, 1983; Raiffa, 1982;

Thompson & Hastie, 1990). To buy a house at the lowest possible cost, for example, a prospective home buyer must estimate accurately the home owner's lowest selling price; the home owner, in turn, has an equivalent interest in estimating the home buyer's maximum purchase price. If both parties' estimates are biased—specifically, if buyers underestimate owners' lowest selling price and owners overestimate buyers' highest purchase price—negotiations may be more time-consuming than they otherwise would have been and may result in impasse, foregoing a potentially profitable transaction.

Accurate perspective taking among owners and buyers is all the more important (and more difficult) because owners and buyers tend to have divergent perceptions. In particular, it is well established that owners value things more than do buyers simply because they own them (Kahneman, Knetsch, & Thaler, 1990, 1991; Knetsch, 1989; Knetsch & Sinden, 1984; Thaler, 1980). This *endowment effect* stems primarily from people's greater sensitivity to losses than to gains: A loss of a given magnitude is more painful than a gain of an equal magnitude is pleasant (Kahneman & Tversky, 1979; Tversky & Kahneman, 1991, 1992; see also Beggan, 1992; Carmon & Ariely, in press). Owners are therefore more reluctant to sell a commodity in their possession than they would be anxious to buy the commodity if they did not own it. In one demonstration of the endowment effect, Kahneman et al. (1990) endowed some students with Cornell coffee mugs and asked them to indicate the lowest price they would sell their mug for. That price was, on average, more than three times the average highest price that students who did not own mugs said they would pay to buy an identical mug. Accurate perspective taking among owners and buyers, then, necessitates an unbiased perception of the endowment effect.

We hypothesized that owners and buyers tend to underestimate the magnitude of the endowment effect because they experience *egocentric empathy gaps*, overestimating the similarity between their own valuation of a commodity and the valuation of people in the other role. Furthermore, we hypothesized that these empathy gaps stem partly from people's biased predictions of how much they themselves would value the commodity if they were in the

Leaf Van Boven and David Dunning, Department of Psychology, Cornell University; George Loewenstein, Department of Decision and Social Sciences, Carnegie Mellon University.

We thank Nicholas Epley, Thomas Gilovich, Ian Newbey-Clark, and Dennis Regan for helpful comments on a draft of this article. This research was supported by National Institute of Mental Health Grant RO1 56072 and National Science Foundation Grant SBR-9521914.

Correspondence concerning this article should be addressed to Leaf Van Boven, who is now at Faculty of Commerce and Business Administration, University of British Columbia, 2053 Main Mall, Vancouver, British Columbia, Canada V6T 1Z2. Electronic mail may be sent to Leaf Van Boven at vanboven@commerce.ubc.ca, to David Dunning at dad6@cornell.edu, or to George Loewenstein at gl20@andrew.cmu.edu.

other role. Because owners value commodities more than do buyers, owners therefore are likely to overestimate a commodity's value to buyers who, in turn, are likely to underestimate a commodity's value to its owner.

Research shows that people's perspective-taking efforts are often hindered because their own perceptions "contaminate" their estimates of others' perceptions, even when they know or suspect that others' perceptions are systematically different from their own. People find it difficult, for example, to mentally undo their own privileged information when estimating the perceptions of those who do not have access to the same information, as indicated by research on the *hindsight bias* (Fischhoff, 1975; Fischhoff & Beyth, 1975) and the *curse of knowledge* (Camerer, Loewenstein, & Weber, 1989; Keysar & Bly, 1995; Keysar, Ginzel, & Bazerman, 1995). People's privileged information about their own internal states may similarly contaminate their estimates of how they appear to others. This is evidenced by research on the *illusion of transparency*, which documents people's tendency to overestimate how well others can discern their internal states (Gilovich, Savitsky, & Medvec, 1998; Van Boven, Medvec, & Gilovich, 2000; Vorauer & Claude, 1998). These lines of research document the difficulty people have setting aside their own perspective when estimating the perspective of someone else.

Our research covers similar ground but examines a slightly different question. Whereas past research examined people's ability to bridge a gap in privileged information, our research examined people's ability to bridge a gap in subjective experience. In particular, we examined how well people in one psychological state can take the perspective of people in a different psychological state. We hypothesized that people in the psychological state of either owning or not owning a commodity overestimate the similarity between their own perspective and that of people in the other psychological state. Furthermore, we suspected that people's biased assessments of the phenomenology of people who are in a different role stem partly from their biased assessments of how they themselves would feel if they were in that role.

Recent evidence suggests that people indeed tend to overestimate the similarity between their current feelings and how they would feel in a different circumstance (Loewenstein, 1996), a tendency Loewenstein and colleagues termed *projection bias* (Loewenstein, O'Donoghue, & Rabin, 2000). People's present, transient feelings of hunger, for example, influence their decisions about future food consumption, even when considering future situations in which they should know whether they will be hungry or not (Gilbert, Gill, & Wilson, 1998; Read & van Leeuwen, 1998). More relevant to the present studies, people tend to underestimate how much they will value a commodity once they own it (Loewenstein & Adler, 1995). This finding suggests that if owners and buyers estimate how much people in the other role will value a commodity by imagining how much they themselves would value the commodity if they were in the other role, they will experience egocentric empathy gaps.

In five studies, we investigated whether owners and buyers experience egocentric empathy gaps when estimating the value of a commodity to people in the other role. We predicted that participants in both roles would overestimate the similarity between their own and the other role's valuation of a commodity, thereby underestimating the magnitude of the endowment effect. In Studies 1 and 2, we explored whether owners and buyers would

accurately predict how valuable a coffee mug would be to people in the other role. In Study 3, we examined whether underestimating the endowment effect would lead people to make decisions that cost them money. In Study 4, we investigated whether owners and buyers would recognize the endowment effect after learning of the true difference between owners' and buyers' valuations or whether they attribute the difference to some other psychological mechanism. Finally, in Study 5 we manipulated participants' ability to introspect about how they would feel if they were in the other role to see if this might reduce their egocentric empathy gaps.

Study 1: Owners and Buyers

As an initial investigation of whether owners and buyers experience egocentric empathy gaps, we built on the methodology of Kahneman et al. (1990). Some participants, whom we endowed with Cornell coffee mugs, indicated the lowest price they would sell their mug for. Other participants who were not endowed with mugs indicated the highest price they would pay to purchase a mug. Mug owners then estimated the highest purchase price of the average buyer and buyers estimated the lowest selling price of the average owner. We expected to replicate the endowment effect: Owners would require more money to sell their mug than buyers would be willing to pay to obtain one. More important, we predicted that owners and buyers would underestimate the magnitude of this effect: Owners would overestimate buyers' highest purchase price and buyers would underestimate owners' lowest selling price.

We also examined whether knowledge of the endowment effect would moderate these empathy gaps by conducting the study with students from two different courses. In one course, students had been exposed to information about the endowment effect through course lectures and required readings. In the other course, students had not been exposed to the endowment effect. We suspected that the "educated" students might exhibit less of an egocentric empathy gap than the "naive" students.

Method

Sixty-one Cornell undergraduates participated as part of classroom exercises. In each class, the experimenter randomly divided students into owners ($n = 31$) and buyers ($n = 30$). Owners were each given a black plastic travel mug emblazoned with "Cornell University" in white letters along with the following written instructions:

You now own a Cornell mug that is yours to keep and take home. In a few minutes, you will have an opportunity to sell the mug to the experimenter in exchange for cash. For each of the prices below, please indicate whether you choose to: (1) receive that amount of money and return the mug to the experimenter, or (2) not sell the mug at that price. The experimenter will randomly select one of the prices listed below and your choice for that price will be honored.

Buyers were meanwhile told they would have the opportunity to purchase an identical mug and were given the following written instructions:

You now do not own a Cornell mug that you may keep and take home. In a few minutes, however, you will have an opportunity to purchase a mug from the experimenter. For each of the prices below, please indicate whether you choose to: (1) pay the experimenter that amount of money in exchange for a Cornell mug, or (2) not pay the experimenter that amount of money and receive no mug. The experimenter

will randomly select one of the prices listed below and your choice for that price will be honored.

Owners indicated for every price on a list of prices that increased in 50¢ increments from \$0.00 to \$10.00 whether they would sell their mug. Buyers indicated for every price on a similar list whether they would purchase a mug. (The experimenter said he would accept checks and IOUs.) Neither group was told that the mug sold for \$5.95 at the campus store. We defined owners' valuation of the mug to be the lowest price they would sell their mug for and buyers' valuation of the mug to be the highest price they would pay to purchase a mug.

After indicating their own valuation, participants estimated the valuation of the average participant in the other role. Owners estimated the maximum price the average buyer would pay to acquire a mug by completing a sheet identical to the one the actual buyers completed. Buyers estimated the minimum price for which the average owner would sell a mug by completing a sheet identical to the one actual owners completed. Afterward, the randomly selected price was announced, and all resulting transactions were conducted.

To investigate the role of knowledge of the endowment effect in participants' estimates of the other role's valuation, we conducted the study with participants from two different classes. *Naive* participants (17 buyers and 16 sellers) were students in an introductory developmental psychology class who had not learned of the endowment effect. *Educated* participants (14 buyers and 14 sellers) were students in an introductory social psychology class who had been exposed to the endowment effect through course lecture and required readings. It is noteworthy that the lecture illustrated the endowment effect with the mug study of Kahneman et al. (1990) on which we modeled our procedure.

Results and Discussion

As expected, there was a substantial endowment effect. Owners' average lowest selling price ($M = \$5.40$) was more than three times buyers' average highest purchase price ($M = \$1.56$), $t(59) = 8.68$, $p < .001$. More important, owners' and buyers' estimates of the other role's valuation were egocentric. Owners overestimated buyers' highest purchase price ($M = \$2.93$), and buyers underestimated owners' lowest selling price ($M = \$4.06$), $t(59) = 3.97$ and -2.92 , respectively, $ps < .01$.¹ Further evidence of participants' egocentrism was the positive partial correlation between their own valuation of the mug and their estimate of the mug's value to the participants in the other role, controlling for participants' own role, $r(58) = .42$, $p < .001$. These findings confirmed our prediction that owners and buyers would underestimate the magnitude of the endowment effect.

To compare owners' and buyers' egocentric empathy gaps and to examine whether knowledge of the endowment effect moderated these empathy gaps, we created egocentrism scores that measured the extent to which participants thought that the other role's valuation was closer to their own than it was. For buyers, we subtracted their estimates of owners' valuation from owners' actual valuation of \$5.40; for owners, we subtracted buyers' actual valuation of \$1.56 from owners' estimates of buyers' valuation. For example, a buyer who estimated owners' average lowest selling price to be \$4.00 would receive an egocentrism score of \$1.40 (owners' actual valuation of \$5.40 minus the buyer's estimate of \$4.00). An owner who estimated buyers' average highest purchase price to be \$3.00 would receive an egocentrism score of \$1.44 (the owner's estimate of \$3.00 minus buyers' actual average valuation of \$1.56). Positive egocentrism scores thus indicate that

participants estimated the other role's valuation to be closer to their own than it actually was, on average.

Overall, the egocentrism scores were significantly positive ($M = \$1.35$), $t(60) = 7.46$, $p < .001$. We subjected the scores to a 2 (owners vs. buyers) \times 2 (naive vs. educated participants) analysis of variance (ANOVA), which yielded neither a main effect for owners versus buyers nor for naive versus educated participants, $F_s < 1.1$, both *ns*. Owners and buyers did not differ significantly in their egocentrism ($M_s = \$1.34$ and $\$1.36$, respectively) nor did naive and educated students ($M_s = \$1.17$ and $\$1.54$, respectively). Simple effect tests indicated that the egocentrism scores of each condition were significantly greater than 0, all $t_s > 4.8$, all $ps < .01$. We do not, however, wish to make too much of the nonsignificant difference between educated and naive participants' empathy gaps because, except for a few comments during debriefing by some educated participants, we had no formal assessment of that group's actual knowledge of the endowment effect.

Study 2: Owners and Buyers Redux

The findings of Study 1 indicated that owners and buyers experience egocentric empathy gaps, underestimating the endowment effect. Two aspects of Study 1, however, may have artificially produced the results and are worthy of consideration. First, we propose that people underestimate the endowment effect because their own subjective experience contaminates their estimates of how valuable the mug would be to someone in the other role. It is possible, though, that participants' estimates of the mug's value to people in the other role were biased simply because they wrote their own price first, anchoring on that number, and not because their estimate was contaminated by their own subjective experience. Their own price, in other words, may have served as a numerical anchor from which participants adjusted when estimating the valuation of people in the other role. Such adjustments tend to be insufficient (Jacowitz & Kahneman, 1995; Tversky & Kahneman, 1974), so their estimates would have been too close to their own valuation. We addressed this concern in Study 2 by counterbalancing the order in which participants stated their own valuation and estimated the valuation of the people in the other role. If the results of Study 1 were an artifact of participants having written their own valuation first, their empathy gaps should be diminished when they estimate the other role's valuation first.

Second, participants may have underestimated the magnitude of the endowment effect because they were not sufficiently motivated to make accurate estimates of the other role's valuation. To the extent that accurately estimating the other role's perspective requires effort, factors that inhibit effort—such as lack of motivation—could have produced our results. We addressed this concern by offering some participants a monetary incentive for accurately estimating the other role's valuation.

¹ These findings remain significant if we exclude from our analysis the six buyers who indicated they would not purchase a mug at any price and the one owner who indicated she would not sell her mug for less than \$10.00.

Method

Forty-three Cornell undergraduates enrolled in introductory economics courses participated as part of a classroom exercise. The procedure was nearly identical to Study 1. Students were randomly divided into owners ($n = 19$) and buyers ($n = 24$). Owners were given black plastic Cornell travel mugs and indicated the lowest price for which they would sell their mugs on a list of prices that increased in 50¢ increments from \$0.00 to \$10.00. Buyers indicated the highest price they would pay for a mug on a similar list. Owners also estimated the highest purchase price of the average buyer, and buyers estimated the lowest selling price of the average owner. The procedure used to elicit participants' own and estimated valuations was identical to that of Study 1, except that we counterbalanced the order in which participants stated their own valuation and estimated the other role's valuation. We also offered half of the participants (11 buyers and 11 sellers) a \$2.00 incentive if their estimate of the other role's valuation was within 50¢ of the actual average valuation.

Results and Discussion

Buyers' and owners' valuations again demonstrated an endowment effect. Owners' lowest selling price ($M = \$6.37$) was more than three times greater than buyers' highest purchase price ($M = \$1.85$), $t(41) = 6.99$, $p < .001$. Owners' and buyers' estimates of the other role's valuation were again egocentric: Owners overestimated buyers' highest purchase price ($M = \$3.93$) and buyers underestimated owners' lowest selling price ($M = \$4.39$), $t_s(42) = 4.20$ and -2.91 , respectively, $ps < .01$. As in Study 1, further evidence of participants' egocentrism was the positive partial correlation between their own valuation of the mug and their estimates of the mug's value to the other role, controlling for participants' own role, $r(40) = .38$, $p < .05$.²

To examine whether the order in which participants stated their own valuation or the presence of a monetary incentive moderated participants' egocentrism, we computed egocentrism scores as we did in Study 1. These scores were, again, significantly positive ($M = \$2.04$), $t(42) = 7.53$, $p < .001$. We subjected these scores to a 2 (owner vs. buyer) \times 2 (incentive vs. no incentive) \times 2 (own valuation first vs. own valuation second) ANOVA. None of the main effects nor the interactions was significant, $F_s < 1.35$, *ns*. Buyers and sellers did not differ significantly in their egocentrism scores ($M_s = \$2.01$ and $\$2.07$, respectively) nor did those who were offered an incentive differ significantly from those who were not ($M_s = \$1.87$ and $\$2.28$, respectively). Finally, those who stated their own valuation first did not differ significantly from those who stated their own valuation second ($M_s = \$1.71$ and $\$2.36$, respectively). Simple effect tests indicated that the egocentrism scores of each condition were significantly greater than 0, all $t_s > 4.2$, all $ps < .01$. These observations suggest that the presence of a monetary incentive or stating one's own valuation first do not moderate owners' and buyers' egocentrism.

Taken together, the results of Studies 1 and 2 indicate that owners and buyers experience egocentric empathy gaps that lead them to underestimate the magnitude of the endowment effect. We next investigated whether these egocentric empathy gaps might lead people to behave in ways that cost them money.

Study 3: Buyers' Agents

Some participants in Study 2 who underestimated the endowment effect failed to earn a \$2.00 incentive for accurate estimates.

But foregone monetary incentives notwithstanding, what harm is caused by egocentric empathy gaps between owners and buyers? The harm is that successful interactions between owners and buyers often hinge on people's ability to estimate accurately the other persons' valuation. This is true, for example, when people act as "buyer's agents." A buyer's agent is a person whose job is to buy a commodity for someone else. The ability of buyers' agents to secure a profit is often tied to their ability to estimate accurately owners' valuation of a commodity. But because buyers' agents are not themselves owners, they are likely to suffer an egocentric empathy gap and underestimate how valuable the commodity is to its owner, leading them to mishandle otherwise profitable ventures. A stockbroker representing a buyer, for example, may underestimate a stock's value to its owner and make too low an offer, mistakenly thinking the owner will come down in price more than he or she will. If time is limited, or if there are other interested buyers, the broker may miss out on a substantial profit.

We created an analogous situation in Study 3 by dividing participants into owners and buyers' agents. We gave owners Cornell mugs and asked them to indicate their lowest selling price. We told buyers' agents they would act on behalf of a buyer who had given them \$10.00 to purchase a mug for the buyer. If an agent was able to purchase a mug, he or she could keep whatever was left of the \$10.00; otherwise, the buyer kept the \$10.00 and the agent received no money. Buyers' agents were told they would make a single offer for one of the owners' mugs and that if their offer exceeded the owners' lowest selling price (which they were not told), their offer would be accepted.

We expected that because buyers' agents did not themselves own a mug, they would experience an egocentric empathy gap, underestimating the mug's value to its owner. This empathy gap, in turn, would lead agents to make offers that were too low and unlikely to be accepted, leaving them with no money.

Method

Fifty-two Cornell undergraduates participated as part of a class exercise in introductory economics and psychology courses. Within each class, we randomly divided participants into owners and buyers' agents (each $n = 26$). Owners were given black plastic travel mugs like those from Studies 1 and 2 along with the following written instructions:

You now own a Cornell mug that is yours to keep and take home. In a few minutes, you will have a single chance to sell your mug to one of the other students who is acting as a buyer's agent. The way it will work is this: You will be paired with one of the students who does not own a mug. That student will act as a buyer's agent who has been given \$10 by a hypothetical buyer to purchase your mug. The buyer's agent will offer to purchase your mug for a price between \$0 and \$10. If you sell your mug to the buyer's agent for that price—that is, if your lowest selling price is less than or equal to the offer price—he or she will get to keep whatever is left of the \$10, but will not get to keep the mug. If you reject the offer from the buyer's agent—that is, if your lowest selling price is higher than the offer price—you will keep your mug and the buyer's agent will get nothing. For each of the prices listed below, please mark with an "X" whether or not you will sell your mug.

² This correlation was nearly identical for participants who estimated the other role's valuation first ($r = .37$) and for participants who stated their own valuation first ($r = .38$).

Owners indicated whether they would sell their mug or not at each price on a list of prices that increased in 50¢ increments from \$0.00 to \$10.00.

Buyers' agents were told they would act on behalf of a hypothetical buyer who had given them \$10.00 to purchase a mug and that if they were able to purchase a mug they could keep whatever was left of the \$10.00. Buyers' agents were given the following written instructions:

You now do not own a Cornell mug that is yours to keep and take home. Your task is to act as a buyer's agent who has been given \$10 by a hypothetical buyer to purchase a mug. The way it will work is this: You will be paired with one of the mug owners. You will have a single chance to make an offer to the mug owner to purchase the mug for a price between \$0 and \$10. If the mug owner agrees to sell his or her mug for that price—that is, if the mug owners' lowest selling price is equal to or less than your offer—you will get to keep whatever is left of the \$10, but will not get to keep the mug. If the mug owner rejects your offer—that is, if your offer is less than the mug owners' lowest selling price—he or she will keep the mug and you will get no money.

To indicate their offers, buyers' agents placed an "X" next to a price on a list of prices that increased in 50¢ increments from \$0.00 to \$10.00.

Owners and buyers' agents wrote their lowest selling prices and offers on slips of paper that the experimenter collected, randomly paired, and exchanged between the two groups. Participants then determined whether the offers were accepted; that is, if it was equal to or exceeded the lowest selling price. All transactions were then honored and participants debriefed. Neither owners nor buyers' agents were told that the price of the mug at the campus store was \$5.95.

Results and Discussion

Buyers' agents were not very successful. Their offers ($M = \$4.92$) were significantly lower than the owners' lowest selling prices ($M = \$6.83$), $t(50) = 4.23$, $p < .001$, and only 19% of the offers were accepted, much less than a null comparison of 50%, binomial $z = 3.16$, $p < .001$.

It may be more appropriate, however, to compare agents' offers with the expected profit-maximizing offer: The single offer that would yield the highest average profit, given the distribution of owners' lowest selling prices. The profit-maximizing offer is the one that would be made by an agent who is knowledgeable about the owners' lowest selling prices in order to maximize the agents' expected earnings. This offer is one that is high enough to be accepted, on average, but still low enough to yield a profit; the offer need not equal the average of owners' lowest selling prices.

In this study, the profit-maximizing offer was \$6.50, significantly higher than agents' actual offers, $t(25) = 5.53$, $p < .001$.³ If all buyers' agents made offers of \$6.50, 62% of those offers would have been accepted, substantially more than the percentage actually accepted, binomial $z = 4.44$, $p < .001$. Given the acceptance rate of the profit-maximizing offers and that each accepted offer would yield a profit of \$3.50, buyers' agents would have earned \$2.15, on average. They actually earned an average of only 75¢, $t(25) = 4.49$, $p < .001$. These findings indicate that people's empathy gaps, in this case buyers' agents' underestimation of a mug's value to its owner, may lead them to behave toward others in ways that are costly.

Study 4: What Were They Thinking?

The results of the first three studies indicated that owners and buyers are unable to anticipate fully the difference between their

own valuation and that of people in the other role. But what about after they have received information about the valuation of people in the other role? When people discover the true difference between owners' and buyers' valuations do they recognize the endowment effect as the source of the difference? Informal observations from Study 3 suggest they do not. One buyer's agent in particular was so upset when she found out that her offer was rejected that she shouted insulting profanities at the mug owners, hollering that she had been cheated out of her money. Although this woman's actions were extreme, her perceptions were not. Many buyers' agents said they thought the owners were greedy ("How can they possibly think anyone would pay them that much for a mug?"). Many owners, meanwhile, seemed to be insulted by the low offers and remarked that the buyers' agents were also quite greedy ("How can anyone expect to purchase such a great mug for so little?").

These reactions highlight an important implication of egocentric empathy gaps: Because people cannot empathize with others' subjective experience, they may misinterpret others' behavior as stemming from their dispositions. According to the intellectual tradition of *naïve realism*, people often assume that their own perceptions are veridical, as opposed to a subjective interpretation or construal, and must be therefore shared by others (Asch, 1952; Ichheiser, 1949; Piaget, 1926, 1928; Ross & Ward, 1995). When naïve realists discover that others do not share their perceptions, they tend to attribute the discrepancy to others' bias, misinformation, or naiveté. Participants in Study 3 who failed to complete a transaction, for example, seemed to infer that the people in the other role were greedy, rather than recognizing the endowment effect.

In Study 4, we investigated whether such unwarranted dispositional inferences were typical of owners and buyers' agents who fail to complete a transaction. Participants were either owners or buyers' agents, as in Study 3. We probed participants' attributions for the other person's behavior when they failed to complete a transaction by asking them to rate how likely several explanations were for the behavior of the person in the other role. One reason, a dispositional one, centered on the other person's greed. Another reason, more situationally based, was a simple description of the endowment effect. We expected that owners and buyers' agents who failed to complete a transaction would rate the other person's greed as a more likely explanation than the endowment effect.

We also examined our hypothesis that egocentric empathy gaps—and their resulting behavior—stem partly from people's inability to introspect about how they themselves would feel if they were in the other role. We asked half of the buyers' agents to indicate the lowest price they would sell a mug for if they were an owner. In line with prior research (Loewenstein & Adler, 1995), we expected that buyers' agents would underestimate how much they would require to sell their mug if they were an owner. We also expected that their offers would be closely tied to their introspec-

³ It might seem that the expected profit-maximizing offer should slightly exceed the average lowest selling price. In this study, however, the median and mode of owners' lowest selling prices was \$6.50, and no owner stated a lowest selling price of \$7.00. Offers of \$7.00 would thus be accepted as frequently as offers of \$6.50, but each accepted offer would yield less profit (\$3.00 instead of \$3.50).

tions about their own selling prices. We did not expect that asking buyers' agents to introspect about their behavior if they were in the other role would affect their behavior toward owners.

Method

Forty-two Cornell undergraduates enrolled in introductory psychology courses participated in groups of 8 to 12 in exchange for course credit. On arriving at the lab, participants were shown the mug that would be given to owners. The mug was different from the one used in previous studies—it was white porcelain with gold trim and emblazoned with a red and gold Cornell logo—but it was identically priced at the campus store (\$5.95).

We randomly divided participants into owners and buyers' agents (each $n = 21$), and escorted them into separate rooms where we gave them instructions identical to those given to owners and buyers' agents in Study 3. Before making their offer, half of the buyers' agents ($n = 11$) imagined that they were an owner and indicated the lowest price they would sell their mug for on a list of prices that increased in 50¢ increments from \$0.00 to \$10.00, just like the actual owners. Owners and buyers' agents wrote their lowest selling prices and offers on slips of paper that the experimenter collected, randomly paired, and exchanged between the two groups.

After participants determined whether the offer had been accepted (that is, whether the offer was equal to or greater than the owner's lowest selling price), they rated how likely several explanations were for the behavior of the person with whom they were paired. They made these ratings on 7-point scales ranging from *not likely* (1) to *very likely* (7). One explanation centered on the other person's greed: "The Mug Owner [Buyer's Agent] who I was paired with is greedy and is trying to get as much money as possible for him- or herself." Another explanation was an articulation of the endowment effect. For buyers' agents, it was "Because the Mug Owner owned a mug, the owner liked it more than the owner would have if the owner did not own the mug." For owners, it was "Because the Buyer's Agent did not own a mug, the Buyer's Agent did not know how much the Buyer's Agent would like the mug if the Buyer's Agent owned it." After rating these explanations all transactions were honored and participants were debriefed.

Results

Offers and selling prices. Replicating the results of Study 3, the offers from buyers' agents ($M = \$6.19$) were significantly less than owners' lowest selling prices ($M = \$7.38$), $t(39) = 3.18$, $p < .01$, and only 25% of the offers were accepted, significantly less than 50%, binomial $z = 2.29$, $p < .05$.⁴

As in Study 3 we also compared the agents' offers with the expected payoff-maximizing offer, given the distribution of owners' lowest selling prices in this study. In this study the profit-maximizing offer was \$8.00, significantly higher than agents' actual offers, $t(20) = 11.93$, $p < .001$. If all buyers' agents had made such offers, 75% of them would have been accepted, three times more than the actual acceptance rate, binomial $z = 5.16$, $p < .001$. Given the acceptance rate of the profit-maximizing offer and that each accepted offer would yield a profit of \$2.00, buyers' agents would have earned \$1.50, on average, more than their actual average earning of 93¢, although the difference was not significant, $t(20) = 1.51$, $p = .15$. All but one of these findings thus replicate those of Study 3, and the nonsignificant difference was in the same direction as in Study 3.

Attributions. To examine the attributions of participants who did not complete a transaction, we conducted a 2 (greed vs. endowment effect explanation) \times 2 (owner vs. buyer's agent)

mixed model ANOVA on participants' explanation likelihood ratings. This analysis yielded the expected main effect of greed vs. endowment effect, $F(1, 14) = 4.66$, $p < .05$. Participants rated greed as a more likely explanation of the other person's behavior ($M = 5.34$) than the endowment effect ($M = 4.17$). There was also an unexpected main effect for role, $F(1, 14) = 6.16$, $p < .05$, reflecting that buyers' agents rated both reasons as more likely ($M = 5.20$) than owners ($M = 4.30$). The interaction was not significant, $F(1, 14) = 1.19$, *ns*. These findings suggest that participants who failed to complete a transaction misinterpreted the other person's behavior as stemming from greed more than from the endowment effect.⁵

Introspected selling prices. Buyers' agents were unable to anticipate how they would feel and act if they were in the owners' shoes. Replicating the results of previous studies (Loewenstein & Adler, 1995), agents' estimate of their lowest selling price if they were an owner ($M = \$5.45$) was significantly less than owners' actual lowest selling price, $t(29) = 3.37$, $p < .01$.

In line with our hypothesis that the inability of buyers' agents to imagine their own valuation if they were owners contributes to their egocentric empathy gaps, the average discrepancy between agents' introspected selling prices and their offers was only 35¢ and the two prices were positively correlated, $r(10) = .74$, $p < .05$. Importantly, the offers of buyers' agents who introspected were not significantly different ($M = \$6.00$) from the offers of those who did not introspect ($M = \$6.40$), $t(19) = 1.03$, *ns*.

Discussion

The results of Study 4 provide further evidence that people are unable to appreciate fully the difference between their own perspective and the perspective of people in the other role and that this failure of perspective taking leads them to behave in ways that cost them money. Furthermore, participants in this study who failed to complete a transaction rated greed as a more likely explanation of the other person's behavior than the endowment effect. Participants thus exhibited a *correspondence bias*, endorsing a dispositional explanation (greed) for a person's behavior more than a situational explanation (the endowment effect) (Gilbert & Malone, 1995; Jones, 1990; Ross, 1977). Because they were unable to appreciate what it felt like to be in the other role, they resisted the more charitable situational explanation that the behavior of the people in the other role was a by-product of their random assignment to that role (Ross, Amabile, & Steinmetz, 1977). This reasoning yields the unfortunate implication that empathic efforts, when they fall short, may produce more harm (in the form of overly harsh attributions) than good.

⁴ We excluded from all analyses one owner who would not sell his mug for less than \$15.00. We also excluded from the attribution analysis the buyer's agent he was paired with.

⁵ We designed these measures to probe only the attributions of participants who did not complete a transaction. They may have therefore seemed nonsensical to participants who did complete a transaction. Indeed, those participants rated the likelihood of both greed ($M = 2.25$) and the endowment effect ($M = 2.98$) well below the midpoint of the scale.

Study 5: Bridging the Gap

Buyers' agents in Study 4 underestimated how valuable a commodity would be to them if they owned it and their behavior toward owners was closely tied to those estimates. This result, along with the positive correlation between participants' own valuation and their estimate of the other role's valuation in Studies 1 and 2, suggests that people's inability to imagine how they would feel if they were in the other role contributes to their egocentric empathy gap. Alas, this evidence, strong though it may be, is correlational and so cannot establish the causal link between people's biased self-predictions and their biased predictions of others.

We conducted Study 5 to provide more direct and compelling evidence that misestimates of one's own perceptions in a different psychological state contribute to misestimates of the perceptions of other people who are actually in that state. We did so by manipulating the ability of buyers' agents to place themselves into the phenomenological shoes of an owner.

All participants in this study were assigned to the role of buyer's agent. We gave some buyers' agents their own mug, allowing them to appreciate better the subjective experience of mug ownership. Before buyers' agents made their offers (they were randomly paired with the lowest selling price of an owner from earlier studies), we asked them to imagine they had been assigned to the owners' role and to indicate what their lowest selling price would have been. We also asked buyers' agents to predict the lowest selling price of the owner they were paired with. We expected that agents who owned mugs, because they would be able to appreciate the phenomenology of ownership, would exhibit greater empathic accuracy, stating higher introspected selling prices, predicting higher selling prices for the owners they were paired with, and making higher offers for those owners' mugs. We further expected that the effect of mug ownership on agents' ability to imagine how they would feel if they were selling a mug would at least partially mediate the impact of mug ownership on agents' offers.

Method

Fifty-four Cornell undergraduates participated in exchange for course credit. On arrival at the lab, they were told they would be assigned to the role of owner or buyer's agent, as in Studies 3 and 4, and the experimenter described each role in detail. The experimenter said that participants would be paired with a randomly selected participant in the other role from an earlier version of the experiment, but that all of the participants in any session would be assigned to the same role. We then gave participants in the ownership experience condition ($n = 29$) a black plastic Cornell mug that was theirs to keep no matter which role they were assigned to. Participants in the no ownership condition ($n = 25$) were not given mugs.⁶

We "randomly" assigned participants to the role of buyer's agent and gave them written descriptions of their role identical to the ones from Studies 3 and 4. We then asked them to imagine they had been assigned to the role of owner and to introspect about what their lowest selling price would have been on a form identical to the one completed by owners in previous studies. Half of the participants introspected about their selling price before they knew they were assigned to be buyers' agents, and half introspected after they knew their role assignment.

Participants then estimated the lowest selling price of the owner from the previous study with whom they were paired. Finally, participants made an offer between \$0.00 and \$10.00 for the purchase of a mug on a form identical to one completed by buyers' agents in previous studies. After-

ward, participants' offers were paired with a randomly selected lowest selling price from Studies 3 and 4, all transactions were honored, and participants were thoroughly debriefed.

Results

Whether participants stated an introspected selling price before or after they knew their role had no effect on their responses, so we do not further discuss this factor.

As expected, participants who themselves owned a mug made higher offers for someone else's mug ($M = \$6.24$) than did participants who did not own a mug ($M = \$5.36$), $t(52) = 2.64$, $p < .05$. Allowing buyers' agents to experience ownership significantly reduced their egocentric empathy gaps. Also as expected, participants in the ownership experience condition introspected that they would state a higher lowest selling price ($M = \$5.91$) than did participants in the no ownership condition ($M = \$5.06$), $t(52) = 2.08$, $p < .05$. Buyers' agents who owned mugs were thus better able to imagine how they themselves would feel if they were in the other role. Participants in the ownership experience condition also estimated that the lowest selling price of the owner from one of the previous studies whom they were paired with was higher ($M = \$5.35$) than participants in the no ownership condition ($M = \$4.90$), although the difference was not statistically significant, $t(50) = 1.16$, *ns*.

We hypothesized that buyers' agents in the ownership experience condition made higher offers than agents in the no ownership condition because owning a mug gave them insight into the phenomenology of ownership. We hypothesized, in other words, that the effect of mug ownership on participants' offers was mediated by the effect of mug ownership on participants' introspected selling prices—the price they predicted they would sell their mug for if they were in the other role. We examined this hypothesis by conducting a mediational analysis (Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1998).

Our earlier analyses established that mug ownership led buyers' agents to make significantly higher offers for another person's mug ($\beta = .34$) and to imagine significantly higher selling prices for their own mug ($\beta = .28$). We next conducted a multiple regression analysis in which we predicted participants' offers simultaneously from a dummy variable for mug ownership and from participants' introspected selling price. That regression, of course, was significant, $R^2 = .43$, $F(2, 51) = 18.85$, $p < .001$. More important, participants' introspected selling price significantly predicted their offers, $\beta = .58$, $t(51) = 5.22$, $p < .001$, whereas mug ownership predicted offers only marginally, $\beta = .18$, $t(51) = 1.66$, $p = .10$. Furthermore, there was a substantial reduction in the variance accounted for by mug ownership, relative to the variance accounted for when mug ownership was the single predictor of participants' offers, $Z = 1.90$, $p < .06$ (via Baron & Kenny's, 1986, modified version of a test proposed by Sobel, 1982). These findings provided the necessary elements to establish

⁶ Thirteen additional participants in a control condition were neither given mugs nor introspected about their lowest selling price. Because these participants did not introspect about their lowest selling price, and because their offers did not differ significantly from those in the no ownership condition, $t(36) = 1.10$, *ns*, their data are not discussed.

that the effect of mug ownership on introspected selling prices partially mediated the effect of mug ownership on offers.

Discussion

These results indicated that allowing buyers' agents to step into the phenomenological shoes of an owner reduced their egocentric empathy gaps, making higher offers for another person's mug. When they owned a mug themselves, buyers' agents realized how they would behave had they been assigned to the role of owner, and this realization influenced their behavior toward the owners. Owning a mug also led participants to predict a higher selling price from the owner they were paired with, although not significantly so. This nonsignificant result highlights the relative importance of people's predictions of what they themselves would do if they were in the other role as a determinant of their behavior toward other people actually in that role.

The results of Study 5 also rule out an alternative interpretation of buyers' agents' behavior, an explanation based on agents' perceptions of risk. Buyer's agents may have made low offers not because they were unable to anticipate how they would feel if they were an owner, as we suggest, but because they adopt a risky strategy, making low offers in the off-chance that the offer is accepted, in which case they obtain a large cash payoff. The relatively small dollar amounts at stake might exacerbate such a risky strategy. A buyer's agent, for example, might have preferred a low probability of \$4.00 (the result of an accepted offer of \$6.00) to a higher probability of \$1.50 (the result of an accepted offer of \$8.50).

To be sure, people tend to adopt riskier strategies with smaller dollar amounts (Machina, 1982; Markowitz, 1952). But if agents' low offers were due to their perceptions of risk, then buyer's agents who owned mugs should have made *lower* offers than those who did not. A risk-based account suggests that buyer's agents who owned mugs would have felt as though they had "house money" to play with given that they already owned a mug ("I get to keep this mug no matter what happens, so why not live dangerously and make a small offer!"). Our results obviously contradict this prediction. Furthermore, an interpretation of our findings based on risk would neither predict the effect of mug ownership on introspected lowest selling prices, nor that those introspected selling prices would mediate the effect of mug ownership on offers—as we found in this study. Finally, a risk-based interpretation cannot explain the findings of Studies 1 and 2 in which participants overestimated the similarity between their own and the other role's valuation of a mug.

General Discussion

The results of five studies supported our hypothesis that owners and buyers experience egocentric empathy gaps, overestimating the similarity between their own and the other role's valuation of a commodity, thereby underestimating the magnitude of the endowment effect. Participants in Studies 1 and 2 estimated that the other role's valuation of a commodity was closer to their own than it was: Owners overestimated the buyers' valuation, and buyers underestimated owners' valuation. Their estimates of the other role's valuation were also positively correlated with their own valuation. Underestimation of the endowment effect led partici-

pants in Studies 3 and 4 to behave in ways that led to reduced earnings in a market setting. Participants in Study 4 rated the greedy dispositions of people in the other role as a more likely explanation of their behavior than the endowment effect. Finally, participants in Study 5 who were able to experience the phenomenology of the other role exhibited less of an egocentric empathy gap than did participants who were unable to do so. A mediational analysis confirmed that people's behavior toward others in another role is caused partly by their introspections about how they themselves would feel and behave if they were in that role.

Robustness of Egocentric Empathy Gaps

The potential for costly behavior outside the laboratory created by egocentric empathy gaps between owners and buyers naturally raises the issue of the robustness of the phenomenon. Might people learn to overcome their egocentric empathy gaps with repeated interactions, becoming more calibrated in their estimates of the other role's phenomenology? We report evidence elsewhere suggesting that they do not (Van Boven, Loewenstein, & Dunning, 2000a). In that research, buyers' agents made repeated offers to five randomly selected owners, receiving feedback after each offer about the lowest selling price of the owner they were paired with. As one might expect, the agents' offers increased over time, nearing parity with owners' lowest selling price after five rounds. When trading for a new commodity began in a sixth round, however, agents' offers dropped to their initial offers in Round 1. Although buyers' agents learned to predict accurately owners' lowest selling price for a particular commodity, the lesson was commodity-specific ("Gee, owners are really keen on these mugs.") and afforded little insight about the general subjective experience of owning a commodity.

People may face several difficulties in learning to appreciate the phenomenology of the other role, no matter how frequently they engage in buying, selling, and trading. This is because they are unlikely to receive prompt, unambiguous, and accurate feedback about the subjective experience of ownership (Einhorn, 1982). Buyers, for example, are unlikely to hear that the pain associated with losing a commodity generally is greater than the pleasure associated with obtaining it. Without such feedback, learning will be slow, if it occurs at all.

When people do receive feedback, it tends to be piecemeal, and each piece is open to several plausible interpretations that may have nothing to do with the endowment effect. For example, a used car buyer may infer that an owner stated a high asking price because she is greedy, in need of cash, or misinformed about the true value of her jalopy. The results of Study 4 suggest that people may endorse these alternative explanations of the other person's behavior more readily than explanations based on the endowment effect. Moreover, the results of Studies 1 and 2 suggest that owners and buyers do expect the other role's valuations to be different than their own, but they underestimate how different. People therefore may believe that they have already made sufficient allowance for the different valuations of people in the other role. When they are confronted with a difference that is larger than they expected, they may attribute the unanticipated difference to the other person's dispositions ("I realize that the other person sees things differently, but this is ridiculous!").

Such dispositional attributions may be a major vehicle through which egocentric empathy gaps pose a substantial barrier to successful face-to-face negotiations between buyers and sellers. It is possible that buyers and sellers in such negotiations will learn to predict accurately the other person's valuations because misestimates could be quickly corrected. An owner, for example, might directly correct a buyers' misperception of the owners' valuation ("No, I won't sell the mug for less than \$7."). But the results of Study 4 suggest that this information will be met with relatively uncharitable dispositional attributions. These attributions may promote enmity, leading people to act out of spite. Other research has shown, in fact, that people may prefer to incur a cost to themselves in order to hurt someone whom they dislike (Blount, 1995; Gibbons & Van Boven, in press; Loewenstein, Thompson, & Bazerman, 1989; Rabin, 1993). Although buyers and sellers may learn to predict accurately the behavior of the person in the other role, their explanation of that behavior may nonetheless derail a potentially amicable and profitable settlement.

A Glass Half Empty, or Half Full?

Perhaps we should give people more credit for perceiving the existence of the endowment effect rather than focusing on their underestimation of the effect. After all, owners and buyers in Studies 1 and 2 did anticipate divergent perspectives, they simply underestimated the size of the divergence. People may thus have some understanding of the phenomenology of ownership, even if they underestimate the impact of that phenomenology.

It is unclear, though, whether the expectation of the endowment effect was due to participants' insight into the phenomenology of ownership. cursory observation of everyday exchange between owners and buyers may lead people to expect that owners' asking prices are usually higher than buyers' offers. It may be, then, that buyers' and owners' expectations of divergent perspectives had little to do with understanding the experience of ownership (or nonownership) and more to do with the application of a simple "owners-name-higher-prices-than-buyers" script. One avenue for future research might be to explore this possibility by asking people to explain the divergence between owners' and buyers' perspectives in their own words. These explanations could then be examined for references to psychological principles relating to the endowment effect or to other alternative explanations.

A Family of Egocentric Phenomena

Whatever the eventual conclusion regarding people's insight into the endowment effect, the fact remains that participants in these studies were egocentric in their estimates of the phenomenology of people occupying a different role. We are not alone, of course, in our examination of egocentric social judgment. Our work on egocentric empathy gaps between owners and buyers joins a family of research and theorizing about adult egocentrism whose parentage begins with the work of Asch (1952), Ichheiser (1949), and Piaget (1926, 1928), and whose siblings include research on naive realism and the false consensus effect (Ross, Greene, & House, 1977; Ross & Ward, 1995), research on egocentrism in language comprehension and production (Keysar, 1994), and research on the spotlight effect and the illusion of

transparency (Gilovich, Medvec, & Savitsky, 2000; Gilovich et al., 1998; Van Boven et al., 2000; see also Vorauer & Claude, 1998).

Previous work has focused on mental processes or assumptions that lead people to exaggerate the similarity between their perceptions and those of others (see, e.g., Camerer et al., 1989; Keysar & Bly, 1995; Ross et al., 1977). Ross and Ward (1995), for example, suggested that naive realists assume "that other rational social perceivers generally will share my reactions, behaviors, and opinions" (p. 279; see also Griffin & Ross, 1991). These mental processes and assumptions may lead people in one psychological state to experience egocentric empathy gaps, overestimating the similarity between their own perspective and that of people in a different psychological state.

Our research examines a different source of egocentric empathy gaps: people's biased predictions of what their own perceptions would be if they were in a different psychological state (Loewenstein, 1996; Loewenstein et al., 2000). In other words, our research indicates that biased predictions of oneself in a different role—an *intrapersonal* empathy gap—may produce biased predictions of others actually in that role—an *interpersonal* empathy gap. Even if people do not exaggerate how similar they are to others, their mispredictions of their own perceptions in a different psychological state may nonetheless lead them to mispredict the perceptions of others who are actually in that psychological state.

Everyday Egocentric Empathy Gaps

People are frequently in different psychological states, and those people frequently interact with one another. Egocentric empathy gaps similar to the ones documented here between owners and buyers may therefore pervade social relations. In particular, when people are unable to anticipate how they would feel in a different set of circumstances, their efforts to empathize with those who are actually in those circumstances may fall short.

These empathy gaps may unfortunately be most pronounced with respect to visceral states such as hunger, alcohol and drug addiction, or sexual arousal, about which people's experiential knowledge is likely to fade quickly (Loewenstein, 1996). A traditional Irish proverb, for example, states that "the full person does not understand the needs of the hungry." Most people in affluent societies may have little appreciation of the desperation of true starvation, and may consequently work less to alleviate it than if they understood how hunger really felt. People similarly may fail to understand the phenomenon of craving suffered by drug addicts and alcoholics and may therefore view addicts' behavior as stemming from dispositional criminality rather than from the powerful compulsions produced by addiction. Much public policy may thus rest on egocentric perceptions of others' subjective experience. Foreign-aid decisions, for example, may be based on biased assumptions about the suffering of citizens in war-torn or famished nations. In the same way, drug policy may focus too much on punishment and deterrence rather than on prevention and treatment. A broader documentation of egocentric empathy gaps and their potential consequences, we believe, is a worthy topic for further research (Van Boven, Loewenstein, & Dunning, 2000b).

Conclusion

It is often assumed that honest empathic efforts increase empathic accuracy and make for better social relations. That generally

may be so, but the studies reported here suggest that, at least among owners and buyers, even honest empathic efforts may fall short. Carnegie's (1936) "formula that will work wonders for you," it seems, may work fewer wonders than he thought.

References

- Asch, S. (1952). *Social psychology*. New York: Prentice-Hall.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Beggan, J. K. (1992). On the social nature of nonsocial perception: The mere ownership effect. *Journal of Personality and Social Psychology*, *62*, 229–237.
- Blount, S. (1995). When social outcomes aren't fair: The effect of causal attributions on preferences. *Organizational Behavior and Human Decision Processes*, *63*, 131–44.
- Camerer, C., Loewenstein, G., & Weber, M. (1989). The curse of knowledge in economic settings: An experimental analysis. *Journal of Political Economy*, *97*, 1232–1253.
- Carnegie, D. (1936). *How to win friends and influence people*. New York: Pocket Books.
- Carmon, Z., & Ariely, D. (in press). Focusing on the forgone: How value can appear so different to owners and buyers. *Journal of Consumer Research*.
- Einhorn, H. J. (1982). Learning from experience and suboptimal rules in decision making. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 268–286). Cambridge, MA: University of Cambridge Press.
- Fischhoff, B. (1975). Hindsight is not equal to foresight: The effect of outcome knowledge on judgment under uncertainty. *Journal of Experimental Psychology: Human Perception and Performance*, *1*, 288–299.
- Fischhoff, B., & Beyth, R. (1975). I knew it would happen: Remembered probabilities of once-future things. *Organizational Behavior and Human Performance*, *13*, 1–16.
- Gibbons, R., & Van Boven, L. (in press). Contingent social utility in the Prisoners' Dilemma. *Journal of Economic Behavior and Organization*.
- Gilbert, D. T., Gill, M. J., & Wilson, T. D. (1998). *How do we know what we will like? The informational basis of affective forecasting*. Unpublished manuscript, Harvard University.
- Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin*, *117*, 21–38.
- Gilovich, T., Medvec, V. H., & Savitsky, K. (2000). The spotlight effect in social judgment: An egocentric bias in estimates of the salience of one's own actions and appearance. *Journal of Personality and Social Psychology*, *78*, 211–222.
- Gilovich, T., Savitsky, K., & Medvec, V. H. (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.
- Griffin, D. W., & Ross, L. (1991). Subjective construal, social inference, and human misunderstanding. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 24, pp. 319–359). San Diego, CA: Academic Press.
- Higgins, E. T. (1980). Role taking and social judgment: Alternative developmental perspectives and processes. In J. H. Flavell & L. Ross (Eds.), *Social cognitive development: Frontiers and possible futures* (pp. 119–153). New York: Cambridge University Press.
- Ichheiser, G. (1949). Misunderstandings in human relations: A study in false social perception. *American Journal of Sociology*, *55*, 1–67.
- Ickes, W. J. (Ed.). (1997). *Empathic accuracy*. New York: Guilford Press.
- Jacowitz, K. E., & Kahneman, D. (1995). Measures of anchoring in estimation tasks. *Personality and Social Psychology Bulletin*, *21*, 1161–1166.
- Jones, E. E. (1990). *Interpersonal perception*. New York: Macmillan.
- Kahneman, D., Knetch, J., & Thaler, R. (1990). Experimental tests of the endowment effect and the coase theorem. *Journal of Political Economy*, *98*, 1325–1348.
- Kahneman, D., Knetch, J., & Thaler, R. (1991). Anomalies: The endowment effect, loss aversion, and status quo bias. *Journal of Economic Perspectives*, *5*, 193–206.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*, 263–292.
- Kenny, D. A., Kashy, D. H., & Bolger, N. (1998). Data analysis in social psychology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (Vol. 2, 4th ed., pp. 223–266). Boston: McGraw-Hill.
- Keysar, B. (1994). Intuitions about the transparency of intention: Linguistic perspective taking in text. *Cognitive Psychology*, *26*, 165–208.
- Keysar, B., & Bly, B. (1995). Intuitions of the transparency of idioms: Can one keep a secret by spilling the beans? *Journal of Memory and Language*, *34*, 89–109.
- Keysar, B., Ginzel, L. E., & Bazerman, M. H. (1995). States of affairs and states of mind: The effect of knowledge on beliefs. *Organizational Behavior and Human Decision Processes*, *64*, 283–293.
- Knetch, J. L. (1989). The endowment effect and evidence of nonreversible indifference curves. *American Economic Review*, *79*, 1277–1284.
- Knetch, J. L., & Sinden, J. A. (1984). Willingness to pay and compensation demanded: Experimental evidence of an unexpected disparity in measures of value. *Quarterly Journal of Economics*, *99*, 507–521.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, *65*, 272–292.
- Loewenstein, G., & Adler, D. (1995). A bias in the prediction of tastes. *Economic Journal*, *105*, 929–937.
- Loewenstein, G., O'Donoghue, T., & Rabin, M. (2000). *Projection bias in predicting future utility*. Unpublished manuscript, Carnegie Mellon University.
- Loewenstein, G., Thompson, L., & Bazerman, M. (1989). Social utility and decision making in interpersonal contexts. *Journal of Personality and Social Psychology*, *57*, 426–441.
- Machina, M. (1982). "Expected utility" without the independence axiom. *Econometrica*, *50*, 277–323.
- Markowitz, H. (1952). The utility of wealth. *Journal of Political Economy*, *60*, 151–158.
- Neale, M. A., & Bazerman, M. H. (1983). The role of perspective-taking ability in negotiating under different forms of arbitration. *Industrial and Labor Relations Review*, *36*, 378–388.
- Piaget, J. (1926). *The language and thought of the child*. New York: Harcourt Brace.
- Piaget, J. (1928). *Judgment and reasoning in the child*. New York: Harcourt Brace.
- Rabin, M. (1993). Incorporating fairness into game theory and economics. *American Economic Review*, *83*, 1408–1418.
- Raiffa, H. (1982). *The art and science of negotiations*. Cambridge, MA: Belknap.
- Read, D., & van Leeuwen, B. (1998). Time and desire: The effects of anticipated and experienced hunger and delay to consumption on the choice between healthy and unhealthy snack food. *Organizational Behavior and Human Decision Processes*, *76*, 189–205.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 173–220). New York: Academic Press.
- Ross, L., Amabile, T. M., & Steinmetz, J. L. (1977). Social roles, social control, and biases in social-perception processes. *Journal of Personality and Social Psychology*, *35*, 485–494.
- Ross, L., Greene, D., & House, P. (1977). The false consensus effect: An

- egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology*, 13, 279–301.
- Ross, L., & Ward, A. (1995). Psychological barriers to dispute resolution. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 27, pp. 255–304). San Diego, CA: Academic Press.
- Smith, A. (1937). *The wealth of nations*. New York: The Modern Library. (Original work published 1776)
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural models. In S. Leinhardt (Ed.), *Sociological methodology 1982* (pp. 290–312). San Francisco: Jossey-Bass.
- Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, 1, 39–60.
- Thompson, L., & Hastie, R. (1990). Social perception in negotiation. *Organizational Behavior and Human Decision Processes*, 47, 98–123.
- Tversky, A., & Kahneman, D. (1974, September 27). Judgment under uncertainty: Heuristics and biases. *Science*, 185, 1124–1131.
- Tversky, A., & Kahneman, D. (1991). Loss aversion in riskless choice: A reference-dependent model. *Quarterly Journal of Economics*, 106, 1039–1061.
- Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty*, 5, 297–323.
- Van Boven, L., Loewenstein, G., & Dunning, D. (2000a). *An egocentric bias in the prediction of others' tastes*. Unpublished manuscript, University of British Columbia.
- Van Boven, L., Loewenstein, G., & Dunning, D. (2000b). *Egocentric empathy gaps*. Unpublished manuscript, University of British Columbia.
- Van Boven, L., Medvec, V. H., & Gilovich, T. (2000). *The illusion of transparency in negotiations*. Unpublished manuscript, University of British Columbia.
- Vorauer, J. D., & Claude, S. (1998). Perceived versus actual transparency of goals in negotiation. *Personality and Social Psychology Bulletin*, 24, 371–385.

Received August 12, 1999

Revision received December 8, 1999

Accepted January 12, 2000 ■