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Myopic Social Prediction and the Solo Comparison Effect

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Four experiments explored the psychological processes by which people make comparative social judgments. Each participant chose how much money to wager on beating an opponent on either a difficult or a simple trivia quiz. Quiz difficulty did not influence the average person's probability of winning, yet participants bet more on a simple quiz than on a difficult quiz in the first 3 experiments. The results suggest that this effect results from a tendency to attend more closely to a focal actor than to others. Experiment 4 directly manipulated focusing; when participants were led to focus on the opponent instead of themselves, the effect was reversed. The discussion relates the results to other literatures including overly optimistic self-evaluation, false consensus, overconfidence, and social comparison.

Would you be more likely to win a race in excellent conditions, on a dry track and at comfortable temperatures, or in the pouring rain at frigid temperatures? Certainly it is easier to imagine that you would perform well under ideal conditions, but what about your opponents? Comparative social judgments are an important aspect of psychological theories such as those on social comparison, intergroup perception, and social identity (Clement & Krueger, 2002; Messick & Mackie, 1989; Suls & Wheeler, 2000; Turner, 1987). They are also central to research findings on the false consensus effect, the false uniqueness effect, the spotlight effect, and the above-average effect (Epley & Dunning, 2000; Gilovich, Medvec, & Savitsky, 2000; Goethals, Messick, & Allison, 1991; Krueger & Clement, 1994; Ross, Greene, & House, 1977). In addition to their theoretical importance, comparative social judgments also have tremendous practical implications. Anticipating how one will perform relative to competitors is fundamental to a variety of decisions, such as whether to open a new business, apply for a job, ask someone out on a date, or bet on a contest. This article advances theory and research by illuminating the processes by which people make comparative interpersonal judgments and argues that such judgments tend to be overly focused on a single causal agent. In other words, even ostensibly comparative social judgments are often myopic solo judgments of a single actor.

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Recent work (Klar & Giladi, 1999; Kruger, 1999) has shown that relative judgments ("How happy are you compared with the average person?") are more strongly correlated with self-judgments ("How happy are you?") than with judgments of others ("How happy is the average person?"; see also Eiser, Pahl, & Prins, 2001; Epley & Dunning, 2000). It follows that if most people see themselves as happy, then when asked "How happy are you compared with the average person?" people will, on average, rate themselves above average. Kruger (1999) replicates the *above-average* effect by demonstrating that people rate themselves above average in domains for which the average person feels capable, such as driving a car or operating a computer mouse. These same people, however, rate themselves *below average* in more challenging domains such as juggling and computer programming.

Explanations

One possible explanation for these above- and below-average effects is egocentrism: When people are asked to compare themselves with others, they focus primarily on themselves and use self-ratings as a basis for relative ratings. The logic for this explanation lies in the privileged status necessarily held by the self in awareness. There will always be special interest and attention devoted to self-relevant activities, outcomes, and judgments (Markus, 1977; Mussweiler, Gabriel, & Bodenhausen, 2000; Ross & Sicoly, 1979). People know more about themselves, think more about themselves, and care more about themselves than about any other single individual. In addition, people are more sensitive to situational influences on their own behavior than on the behavior of others (Jones & Nisbett, 1972; Ross, 1977). It makes sense, then, that people might tend to focus egocentrically on the self when predicting joint social outcomes.

The second possible explanation for these myopic errors in social judgment is a more general one based on focusing: People focus their attention too much on one actor, which may or may not be the self, at the expense of considering other relevant people. There are many domains in which people give undue weight, undue thought, and undue attention to a focal cause, actor, or hypothesis, and neglect the consideration of other causes, actors, or hypotheses (Kahneman & Tversky, 1973, 1982; Legrenzi, Girotto, & Johnson-Laird, 1993; Schkade & Kahneman, 1998; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). For example, research shows that people routinely give special consideration to a focal hypothesis, evaluating evidence in its light, and failing to give adequate attention to alternative hypotheses or disconfirming evidence (Brenner, Koehler, & Tversky, 1996; Gilovich, 1991; Klayman & Ha, 1987; Tversky & Koehler, 1994). Tversky (1977) identified focusing as a natural result of making comparative judgments, especially when the comparison is directional. For example, Tversky and Gati (1978) reported that 98.6% of their Israeli participants preferred the phrase “Canada is similar to the U.S.A.” over “The U.S.A. is similar to Canada.” The more prominent or salient object takes on a special position as the referent due to the directional nature of this comparative judgment.

The notion that egocentrism is merely a subset of focusing is not a new one in social psychology. Some important phenomena that were first documented as exclusively egocentric effects later came to be viewed as the product of focusing on the self. Evidence for focusing has come from manipulations that change “egocentric” effects by leading people to focus on others rather than themselves. For example, the actor–observer difference describes the egocentric tendency for people to explain their own behavior using more situational attributions than do observers, whose explanations tend to be more dispositional (Jones & Nisbett, 1972). Storms (1973) was able to show that actors could be made into observers simply by changing the perspective from which they viewed the interaction: People who watched a videotape of themselves made more situational attributions for their own behavior. Such simple perspective-taking manipulations can be sufficient to get people to take on others’ points of view and make decisions that focus on others as they normally would focus on themselves (Galinsky & Moskowitz, 2000; Taylor & Fiske, 1975; Thompson, 1995).

The Present Research

Both the egocentrism and the focusing explanations have an intriguing and previously unexplored implication for the psychological processes at work in predicting competitive social outcomes. If people focus on themselves, they will myopically predict that they will benefit more from favorable circumstances than others will, and that they will also suffer more from situational constraints. As a result, people will predict themselves likely to win competitions based on simple tasks (on which all competitors perform well) and likely to lose competitions based on difficult tasks (on which all competitors perform poorly).

There are two distinct reasons to expect such myopic comparisons: differential weighting and differential error. Differential weighting describes the tendency to attend more closely to one’s own performance than that of others. Evidence for differential weighting appears in the weight that people give their own performances relative to those of their opponents in predicting relative performance (see Kruger, 1999). The second reason to expect myopic comparisons is differential error. People’s predictions of others are likely to be made with more error than their predictions of themselves simply because they have less information about others. On simple problems, error is likely to result in underestimation of performance because of ceiling effects. If nearly everyone gets the problem right, then any error in assessing performance will underestimate it. On difficult problems, by contrast, error is likely to result in overestimation of performance because of floor effects (see Erev, Wallsten, & Budescu, 1994). If people estimate others’ behavior with more error than they estimate their own behavior, their predictions of others will be more regressive than their predictions of themselves. As a result, people will predict that others will perform worse than themselves on simple tasks, and that others will perform better than themselves on difficult tasks.

In this article, we present a series of experiments that investigate the influence of task difficulty on comparative social judgment and test the psychological processes involved. This research makes at least three unique contributions. First, although prior work has documented above- and below-average effects when individuals are comparing themselves with the group average (Klar & Giladi, 1997; Kruger, 1999), the experiments presented here also obtain comparative judgments in which people compare two individuals with each other: We examine above- and below-average effects both when individuals compare themselves with a randomly selected group member and when they compare two randomly selected individuals with each other. This is important because some explanations for this type of effect have been based on the difficulties associated with comparing one with many (Giladi & Klar, 2002; Klar & Giladi, 1997; Koehler, Brenner, & Tversky, 1997).

Second, the present experiments take place in a competitive context. This contrasts with prior research on egocentric social comparison conducted in nonstrategic situations (Klar & Giladi, 1999; Klein & Kunda, 1994; Kruger, 1999). The participants in the experiments presented here were all betting on contests. We manipulated the difficulty of the quiz on which the contest was based. Although quiz difficulty does not influence the average competitor’s probability of winning (because everyone is competing with others taking the same quiz), we expected it to influence participants’ predictions regarding their probability of winning. If there is a familiar social situation in which people should have both the motivation and the experience to think strategically about others, it would be in competitions. Therefore, it would be somewhat ironic if people made myopic judgments in competitions, given the importance of accurate interpersonal comparison in competitive contexts, and given prior research showing that people attend closely, even obsessively, to comparative social information in other domains (Blount & Bazerman, 1996; Gilbert, Giesler, & Morris, 1995; Loewenstein, Thompson, & Bazerman, 1989).

Third, the present research presents the strongest evidence to date identifying the causes at work behind myopic social comparison effects. The studies presented here are able to distinguish the focusing explanation from pure egocentrism and explore the two underlying mechanisms of differential weighting and differential error.

Experiment 1 demonstrates self-focused social judgment in a competitive context. Experiment 2 highlights its robustness by replicating the effect of quiz difficulty in a situation that should minimize its impact. The results of Experiment 3 replicate Experiments 1 and 2, and find that they hold even when participants compare two randomly selected individuals. In addition, the results from Experiment 3 help rule out several of the most likely alternative explanations for Experiments 1 and 2. Finally, Experiment 4 directly manipulates attentional focus. Experiment 4 replicates the results of Experiments 1–3 among participants focusing on themselves. However, outcome is reversed for participants focusing on the opponent.

Experiment 1: The Trivia Game

In Experiment 1, participants were invited to bet on a competition. Because winning depended on relative scores, the amount that people bet should have depended on predictions of relative standing. However, consistent with the logic of myopic prediction, we expected that participants would correctly anticipate that they would get better scores on a simple quiz than on a difficult quiz, but would not fully appreciate that others would also perform better on a simple quiz. We hypothesized that participants would be more likely to predict success—and to bet more—when the quiz was simple than when it was difficult. This logic also predicts that manipulations that influence the probability of winning should not have a strong effect on betting if they do not directly influence the individual's absolute score. We therefore also manipulated the hurdle: Participants had to beat either one other person or five other people in order to win. We expected that the manipulation that should not affect bets—quiz difficulty—would; and the manipulation that should influence bets—the hurdle—would not. Both predictions are consistent with a myopic prediction process in which people focus on their own absolute performances and oversimplify, ignore, or underweight the behavior of others.

Method

Participants. We recruited 78 undergraduate students at Carnegie Mellon University by offering them money to participate in an experiment.[1] All participants participated at the same time in a large auditorium in which they could see everyone else and knew they were all completing the same exercise. Participants began the experiment with a promise to be paid $4. They were given the choice of keeping all $4 or wagering any portion of it on their performance in a trivia competition. Participants who won their bets would have any amount they wagered doubled and added to the portion of the $4 not wagered. Participants who lost would only receive the unwagered portion of the $4. This exercise took roughly 5 min to complete and could yield a maximum payoff of $8, a substantial sum for students whose maximum wage for on-campus work was $10 per hour.

Design. The experiment had a 2 (hurdle: beat one vs. five opponents) × 2 (quiz difficulty: easy vs. difficult) between-subjects factorial design. All participants were told their scores would be compared with those of five others, all of whom would be taking the same quiz. Participants in the high-hurdle condition had to beat the highest score of the five to win. Participants in the low-hurdle condition only had to beat the lowest score of the five to win.

Participants in the simple quiz condition were told they would be taking a simple trivia quiz and shown the following example question:

> What is the common name for the star inside our own solar system?
>
> Answer: the sun

Participants in the difficult quiz condition were told they would be taking a difficult trivia quiz and shown the following example question:

> What is the name of the closest star outside our solar system?
>
> Answer: Proxima Centauri

Participants were told that they would be competing against others taking the same quiz.

After making and submitting their bets, participants took their trivia quizzes, which included six questions and a seventh tiebreaker question (on which scores were a function of the distance from the correct answer) that virtually eliminated the possibility of a tied score.

Results

Participants wagered an average of $2.35 ($SD$ = $1.62). Wagers were subject to a 2 (quiz difficulty) × 2 (hurdle) factorial analysis of variance (ANOVA). The results are consistent with our predictions in demonstrating a highly significant effect of quiz difficulty, $F(1, 74) = 29.81$, $p < .001$. As Figure 1 shows, participants taking a simple quiz wagered significantly more (M = $2.95, SD = $1.43) than did participants taking a difficult quiz (M = $1.74, SD = $1.59). Notably, neither the main effect of hurdle, $F(1, 74) = 2.03$, *ns*, nor its interaction with quiz difficulty, $F(1, 74) = 1.31$, *ns*, is significant.

In actuality, the difficulty of the quiz had no bearing on the average likelihood of winning. Mean scores on the simple quiz ($M = 4.03$, $SD = 1.35$) were higher than on the difficult quiz ($M = 1.84$, $SD = 1.46$), $t(76) = 6.86$, $p < .001$, and individual ability may interact with quiz difficulty. Nevertheless, because each participant was competing with others who had taken the same quiz, the odds of winning were equal on the two quizzes. However, the hurdle manipulation had dramatic consequences on the average participant's chance of winning. When participants had to beat five others, the probability of winning was roughly 16%, whereas when participants had to beat one of five others, the probability of winning was 84%. This was the case for both the simple and the difficult quizzes.

Discussion

In a competitive game with real money on the line, participants' bets were influenced by quiz difficulty, which impinged on their absolute scores but not on their relative scores. There is evidence that financial incentives lead people to behave differently, and sometimes more rationally, in strategic contexts (Parco, Rapoport, & Stein, 2002; Smith & Walker, 1993). The fact that the manipulation of difficulty influenced bets despite monetary incentives for more accuracy attests to the robustness of the effect. More importantly, it suggests that the effect is not attributable to simple lack of motivation.

Participants appear to have focused on absolute self-assessment and not on relative interpersonal assessment. Quiz difficulty did not influence participants' average probability of winning, but it had a powerful influence on participants' predictions of winning. Remarkably, the hurdle manipulation did not have a significant influence on participants' bets despite its powerful effect on their chances of winning. In this experiment, we found that the manipulation that should not have affected bets did, and the manipulation that should have influenced bets did not. Both results can be explained by self-focus.

Participants' myopic predictions appear to focus on the self at the expense of considering others. When people make mistakes because they ignore relevant data, it is often possible to correct that

[1] Participants also took part in two other experiments in the same experimental session.

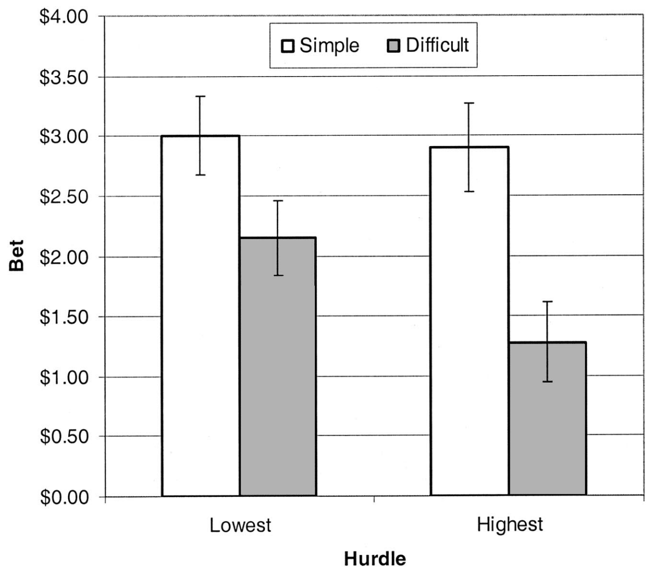

Figure 1. Bets (Experiment 1). Bars indicate standard errors.

error by drawing their attention to the omitted information (Brenner et al., 1996; Croson, 1999). If the failure to consider others is a simple error of omission, it may be possible to eliminate it or reduce it by drawing participants' attention to their competitors' performance. If the results observed in Experiment 1 are due to an excessive focus on self while failing to think about others, forcing participants to think about others should reduce the effect. Experiment 2 tests this hypothesis: Before betting, some participants predicted their own and their opponent's percentile rankings.

Experiment 2 also addresses two potential concerns regarding the generalizability of Experiment 1's results. First, the difficulty of thinking about others increases with the number of others to think about. It is possible that participants in Experiment 1 had particular trouble thinking systematically about competition with five opponents. Experiment 2 simplified the competition so that each participant was only competing with one opponent. Second, Experiment 2 had all participants bet on and compete in both a simple and a difficult trivia quiz competition. We implemented this repeated measures design in the hope that if people saw both the simple and the difficult quizzes, it would lead them to think more systematically about the task and would lead to a decrease in the difference between bets on the simple and the difficult quizzes.

Experiment 2: Multiple Bets

Method

Participants. Participants were 88 undergraduates at Carnegie Mellon University and the University of Pittsburgh who signed up for a series of experiments in which they could make money. Each of the experiments offered a cash reward. In this experiment, participants were then given a choice of wagering up to $4 of their earnings on a trivia competition. Any amount participants wagered would be doubled if they won and taken from them if they lost.

Design. This experiment had two major dependent variables: bets and predicted percentile rankings. Each participant bet on whether his or her score on a trivia quiz would exceed that of one randomly chosen opponent. In addition to betting on the contest's outcome, each participant was also asked to predict percentile rankings on the trivia quiz for both self and opponent, relative to all other participants who had already taken the same quiz. In the interests of providing a motivation for accuracy, participants were promised an extra $0.50 in payment if their predicted rankings were accurate within 5%.[2]

The experiment had a 2 (quiz difficulty: easy vs. difficult) × 2 (order: easy first vs. difficult first) × 2 (prediction: bet before predicting rank vs. predict rank before betting) mixed design, with quiz difficulty manipulated within subject. All participants in Experiment 2 made bets on both the difficult and the simple quizzes. For each quiz, the experimental instructions emphasized that the competition would only compare participants' scores with others' scores on the same quiz. The manipulation of quiz difficulty, as in Experiment 1, varied the expected difficulty of the trivia competition using the same simple and difficult sample questions. The order manipulation varied (between subjects) the order in which the two quizzes were presented.

The prediction manipulation varied (between subjects) whether participants made their bets before or after predicting percentile rankings for self and opponent. By asking participants in the rank-before-bet condition to predict both their own and their opponents' performances before betting, we intended to prompt more reflection regarding the opponent and relative standing. Participants in the bet-before-rank condition, however, bet first and then made percentile rank predictions. Participants in this condition, like participants in Experiment 1, were not asked to do any extra thinking about themselves or their opponent before betting.

Results

Five individuals were dropped from the analysis for not following instructions. Instead of making their predictions in percentile rankings, as instructed, they made them in terms of raw scores (number of answers correct), making their responses difficult to compare with those of the other participants.

Bets. In a 2 (difficulty) × 2 (order) × 2 (prediction) mixed ANOVA on bets with repeated measures on quiz difficulty (simple vs. difficult), the results show a powerful within-subject effect of quiz difficulty. Participants bet more on the simple quiz (M = $2.82, SD = $1.16) than they did on the difficult quiz (M = $1.88, SD = $1.31), $F(1, 79) = 47.44$, $p < .001$. None of the other main or interaction effects are significant. In particular, the hypothesized interaction between quiz difficulty and prediction condition was not significant, $F(1, 79) < 1$, *ns*.

We expected that the difference between bets on the simple and difficult quizzes would be smaller within subject than it would be between subjects, because seeing both contests would highlight their similarity. The difference on first bets between those who bet on the difficult quiz first and those who bet on the simple quiz first was $0.69, $t(81) = 2.60$, $p < .05$, replicating the primary result of Experiment 1. The average within-subject difference between bets on simple and difficult quizzes is $0.94. Seeing both problems back-to-back clearly did not help reduce the tendency to bet more on the simple than on the difficult quiz.

Predicted percentile rankings. To test whether participants' predictions of percentile rankings were consistent with their bets, we conducted a 2 (difficulty) × 2 (target) repeated measures

[2] Participants' actual percentile ranks were measured relative to all those who had previously taken the quizzes. It was possible to compute percentile rankings even for the first participants in Experiment 2 because the set of scores included data from pretesting of the simple and difficult quizzes.

ANOVA. The results show that participants predicted higher percentile rankings for both self and opponent on the simple ($M = 67.20$, $SD = 23.63$) than on the difficult ($M = 57.34$, $SD = 17.87$) quizzes, $F(1, 82) = 44.84$, $p < .001$. In other words, they predicted that, on average, everyone would do better than everyone else on a simple quiz, and these delusions of grandeur are somewhat moderated for the difficult quiz.

This within-subjects effect of quiz difficulty is qualified by a marginally significant within-subjects interaction between quiz difficulty and target (self vs. other), $F(1, 82) = 3.74$, $p = .057$. This interaction is a result of the fact that average predicted percentile rank for self ($M = 72.94$, $SD = 19.04$) is higher than for other ($M = 68.56$, $SD = 19.26$), $t(82) = 2.44$, $p < .05$, on the simple quiz, but this is not true on the difficult quiz, $t(82) = 0.06$, *ns*. On the difficult quiz, participants predicted similar scores for themselves ($M = 57.41$, $SD = 21.24$) and their opponents ($M = 56.80$, $SD = 14.31$).

If participants were betting rationally, they should have bet more when they believed that their scores would exceed those of their opponents. Because this was a purely competitive game, it was only the relative score that mattered for winning. However, the differential weighting hypothesis would predict that one's own score would be weighted more heavily when deciding how much to bet. To test how participants were betting, we conducted two regression analyses on bets. For bets on both simple and difficult quizzes, we regressed them on predicted percentile rank for both self and opponent. Both regressions produced similar results. Participants' predicted rankings for self were highly predictive of betting, but opponents' were not (see Table 1).

Discussion

Several results of Experiment 2 offer insight into the mechanisms at work in myopic prediction. First, the strong within-subject effect of quiz difficulty attests to the robustness of the effect. Second, the regression results support the differential weighting hypothesis that myopic judgments in this competitive game occur because individuals focus too much on their own outcomes and too little on others or on relative standing. Finally, whereas Kruger (1999) and Klar and Giladi (1999) examined comparative judgments among individuals comparing themselves with a group average, our results come from individuals comparing themselves with other individuals, which should reduce the size of the effect (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995). Indeed, Klar and Giladi (1997) explained their results with the singular-target-focusing model of comparative judgment in which they theorize that people have particular trouble comparing individuals with groups. The present results demonstrate myopic social comparisons even when individuals are comparing themselves with just one other person.

Table 1
Bets Regressed on Predicted Performance in Experiment 2

Independent variable	Simple bet	Difficult bet
Own predicted percentile rank	0.41**	0.50***
Opponent's predicted percentile rank	−0.03	−0.04
Adjusted R^2	0.13**	0.21***

Note. Table shows standardized beta weights for independent variables.
** $p < .01$. *** $p < .001$.

Participants' behavior in Experiments 1 and 2 appears to be profoundly egocentric: Comparative social judgments are based primarily on the self. Kruger (1999) and Klar and Giladi (1999) showed, consistent with the regression results of Experiment 2, that rankings of the self relative to others correlate strongly with self-ratings but not at all with ratings of others. However, these findings may have underestimated the predictive value of both ratings of self and ratings of others because of the way these constructs were measured. In Experiment 2, people evaluated self and other on percentile scales, which depend on performance relative to the group. Likewise, evaluations of self and other obtained by Klar and Giladi (1999) and Kruger (1999) were made on verbally anchored Likert scales. For example, participants in Kruger's (1999) first study evaluated themselves and their classmates on scales running from 1 (*very unskilled*) to 10 (*very skilled*). Judgments on verbally anchored scales tend to be influenced by the implicit comparison group, suggesting they are not pure measures of absolute evaluation (Biernat, Manis, & Kobrynowicz, 1997; Heine, Lehman, Peng, & Greenholtz, 2002). A more stringent test of the differential weighting hypothesis would be possible using pure assessments of absolute performance (such as number of questions answered correctly)—such measures were collected in Experiment 3. These measures of absolute performance also allow us to test the differential error explanation for myopic social comparisons. The differential error explanation holds that people's expectations of others are systematically more regressive than their predictions of themselves.

A potential problem with Experiments 1 and 2 is that participants only saw an example question and did not take the quiz before they bet on its outcome. It is possible that the effect of quiz difficulty on bets in Experiments 1 and 2 was a result of participants' inaccurate assumptions about the content of the quizzes they were about to take. For example, participants could have imagined that the difficult quiz would be so challenging that it would practically be a guessing game of chance. Another potential problem with Experiments 1 and 2 is that along with the sample question, participants were told explicitly to expect either a simple or a difficult quiz. It is possible that this instruction could have acted as a demand effect, telling participants that they should expect to succeed on the competition they were told was easy and that they should expect to fail on the competition that they were told was difficult. Giving participants the quiz first and asking them to bet afterward allows us to test both these alternative explanations. Participants in Experiment 3 were not given any preview of the quiz or its difficulty—they simply took the quiz before they bet.

Experiment 3: Betting on the Self Versus a Randomly Selected Person

Experiment 3 tests the possibility that the solo comparison effect observed in Experiments 1 and 2, in which ostensibly comparative judgments are really solo judgments, is not a purely egocentric error but a more general focusing error. If the effect is primarily a result of focusing, then it should operate similarly for others as well as for self. That is, if participants bet on the performance of some other person, they should bet more on that person when competing on a simple quiz than on a difficult one. However, if the focusing bias demonstrated in Experiments 1 and 2 is the result of the "inside view," in which people tend to ignore relevant contextual variables such as base rates when they are thinking about themselves (Kahneman & Lovallo, 1993), then betting on someone else should highlight the "outside view" and reduce or eliminate the effect. Some participants in Experiment 3 were given exactly this opportunity.

Method

Participants. Participants were 144 students at Carnegie Mellon University, 48% of whom were master's students and 52% of whom were undergraduates. At the end of six different classes, we invited students to remain and participate in exchange for the opportunity to earn money. Participants were given \$3 and invited to bet as much or as little as they wanted on a trivia competition. Winning participants would have the amount they bet doubled; those who lost would be left with only the unwagered portion of the \$3.

Design. The experiment had a 2 (quiz difficulty: easy vs. difficult) × 2 (protagonist: self vs. random person) between-subjects design. The protagonist manipulation varied the person on whom participants were betting: Half of the participants were betting on whether they themselves would beat a randomly selected opponent; the other half was betting on a randomly selected "Person A" beating a randomly selected opponent, "Person B."

Procedure. Participants in Experiment 3 took the quiz first. The trivia questions from the difficult and simple quizzes are listed in Table 2. After they had bet, participants were given a questionnaire that asked them to estimate: (a) the probability that they would win; (b) how well the protagonist would do, both in relative terms (percentile rank) and in absolute terms (number of questions correct on the quiz); (c) a 90% confidence interval around their estimate of the protagonist's absolute score; (d) how well the opponent would do in absolute terms; and (e) a 90% confidence interval around their estimate of the opponent's absolute score.

Results and Discussion

Manipulation check. The manipulation of quiz difficulty was successful. Scores on the simple quiz were significantly higher ($M = 8.71$, $SD = 1.10$) than on the difficult quiz ($M = 1.47$, $SD = 1.01$), $t(142) = 40.98$, $p < .001$. Indeed, only 1 of the 75 participants who took the simple quiz got as few as 5 out of the 10 questions correct, and 1 of the 69 participants who took the difficult quiz got as many as 5 out of 10 correct.

Bets. To test for the effects of the independent variables, we first conducted a 2 (difficulty) × 2 (protagonist) between-subjects ANOVA on bets. This test reveals that participants who were betting on the simple trivia quiz bet significantly more ($M =$ \$1.95, $SD =$ \$1.10) than did those who were betting on the difficult trivia quiz ($M =$ \$1.29, $SD =$ \$1.17), $F(1, 140) = 11.82$, $p < .01$ (see Figure 2). Notably, the Difficulty × Protagonist interaction is not significant. When people were betting on some randomly selected "Person A," they made predictions about the relative performance of that person in much the same way they made relative performance predictions about themselves.

The correlation between participants' bets and their estimation of the probability of winning is substantial ($r = .54$, $p < .001$). The results of Experiment 3 would not change appreciably if participants' estimated probability of winning replaced their bets in all statistical analyses. This rules out the alternative hypothesis that participants bet more on the simple than on the difficult quiz because of some reason unrelated to their estimated probability of winning.

Participants' predictions regarding variance allow us to test another alternative explanation for their bets. In particular, low variance on the difficult quiz could reflect a fear that the test would be so difficult that it would overwhelm individual skill in determining performance and that outcomes would be primarily a

Table 2
Trivia Questions Used in Experiment 3

Simple	Difficult
1. How many inches are there in a foot?	Which creature has the largest eyes in the world?
2. What is the name of Pittsburgh's professional hockey team?	How many verses are there in the Greek national anthem?
3. Which species of whale grows the largest?	What company produced the first color television sold to the public?
4. Who is the president of the United States?	How many bathrooms are there in the White House (the residence of the U.S. President)?
5. Harrisburg is the capital of what U.S. state?	Which monarch ruled Great Britain the longest?
6. What was the first name of the Carnegie who founded the Carnegie Institute of Technology?	The word "planet" comes from the Greek word meaning what?
7. How many states are there in the United States?	What is the name of the traditional currency of Italy (before the Euro)?
8. What continent is Afghanistan in?	What is Avogadro's number?
9. What country occupies an entire continent?	Who played Dorothy in "The Wizard of Oz"?
10. Paris is the capital of what country?	Who wrote the musical "The Yeoman of the Guard"?

Tiebreaker question: How many people live in Pennsylvania?

Note. Answers—Simple: (1) 12, (2) Penguins, (3) Blue, (4) George W. Bush, (5) Pennsylvania, (6) Andrew, (7) 50, (8) Asia, (9) Australia, (10) France; Difficult: (1) Giant squid, (2) 158, (3) RCA, (4) 32, (5) Queen Victoria, (6) wanderer, (7) Lira, (8) 6.02×10^{23}, (9) Judy Garland, (10) Gilbert & Sullivan; Tiebreaker: 12,281,054.

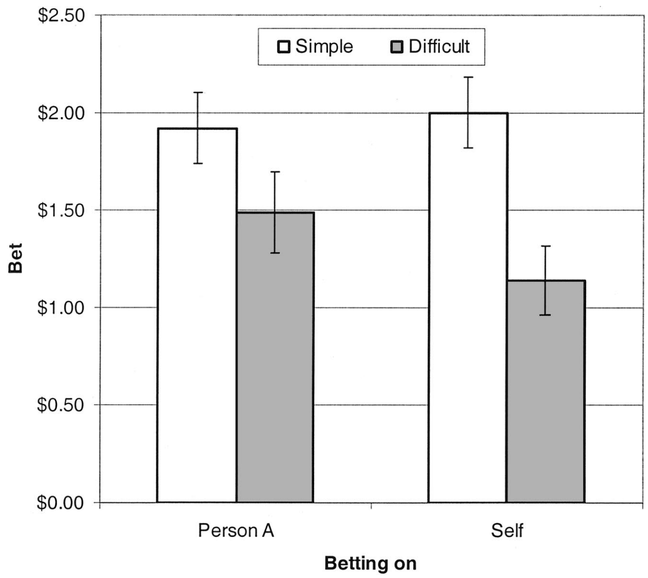

Figure 2. Bets (Experiment 3). Bars indicate standard errors.

product of chance rather than ability. In fact, when asked to specify a range of scores such that they were 90% confident their opponent's score would fall within it, participants in the difficult quiz condition actually estimated a wider range ($M = 3.56$, $SD = 1.89$) than did those who took the simple quiz ($M = 2.64$, $SD = 1.43$), $F(1, 125) = 26.51$, $p < .001$. This renders implausible the alternative explanation for low bets in the difficult condition based on expectations of tie scores.

Differential weighting. We conducted three regression analyses on participants' predictions of performance (see Table 3). In Experiment 3, the absolute predicted scores for protagonist and opponent were both significant predictors of (a) bets, (b) estimated likelihood of winning, and (c) estimates of relative performance. In each of these analyses, participants' predictions of the absolute performance (number of questions answered correctly) of protagonist and opponent were used as independent variables. In all three cases, the score of the protagonist was weighted more heavily than that of the opponent for predicting relative standing (ps $< .05$), consistent with the differential weighting hypothesis. However, the results do not replicate those of Klar and Giladi (1999), of Kruger (1999), or of Experiment 2 in the present article, that judgments of relative standing were uncorrelated with evaluations of others.

The explanation for this apparent inconsistency in the significance of the opponent's performance probably lies in the exact technique used to measure it. In these regression equations, absolute performance of self and other was measured on an easily interpretable scale that was a relatively pure measure of individual performance: scores on the trivia quiz. This objective measure is less subject to influence by the reference group. This result highlights the importance of specifying how evaluations are measured and raises the question of how exactly participants were thinking about others.

Differential error. To test the differential error hypothesis that people would predict their opponents more regressively than the protagonist, predictions of absolute performance were subject to a 2 (difficulty) × 2 (target: protagonist vs. opponent) mixed ANOVA with repeated measures on target. The results reveal the predicted Target × Difficulty interaction effect, $F(1, 141) = 13.0$, $p < .001$. Participants betting on the difficult quiz predicted that the protagonist ($M = 2.93$, $SD = 1.48$) would score worse than the opponent ($M = 3.36$, $SD = 1.45$), $t(67) = -2.48$, $p < .05$, whereas those betting on the simple quiz predicted that the protagonist ($M = 8.22$, $SD = 1.32$) would score better than the opponent ($M = 7.88$, $SD = 1.39$), $t(74) = 2.63$, $p < .05$.

Participants estimated their own scores with some error. As Figure 3 shows, those who obtained low scores tended to overestimate their performance—a natural consequence of error in their estimates and the effect of the floor at a score of zero. If participants accurately estimated their own scores, then their estimates would have fallen along the diagonal. On very difficult problems (that everyone gets wrong) error will tend to result in an overestimation of one's performance, leading to apparent overconfidence. On very simple problems, error will tend to lead to underestimation of one's performance, or underconfidence (Erev et al.,

Table 3
Results of Regressions on Participants' Predictions of Relative Standing Using Predictions of Absolute Performance of Protagonist and Opponent as Independent Variables (Experiment 3)

Independent variable	Relative standing (1–7 Likert scale)	Bet ($0–$3)	Probability of winning (0%–100%)
Protagonist's score (0–10)	1.21***	0.88***	1.01***
Opponent's score (0–10)	−0.68***	−0.61***	−0.64***
Adjusted R^2	0.43***	0.17***	0.26***

Note. Table shows standardized beta weights for independent variables.
*** $p < .001$.

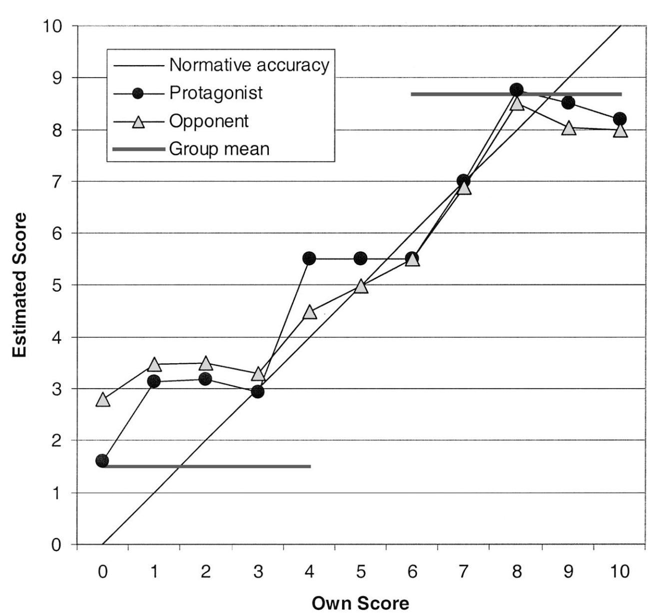

Figure 3. Estimated scores for protagonist and opponent, conditional on participants' actual scores on the trivia quiz (Experiment 3).

1994). If they assumed that others would perform as they themselves did, predictions of others would likewise fall along this consensus diagonal.

Participants' predictions of their opponents' scores are highly correlated with predictions of protagonists' scores ($r = .90$, $p < .001$), even after controlling for quiz difficulty ($pr = .60$, $p < .001$),[3] but are more regressive. On the difficult quiz, despite the fact that they had just overestimated their own performances, participants predicted that their opponents would perform even better. Figure 3 illustrates this pattern. These results are entirely consistent with the differential error hypothesis. The result is that for self-reports of relative standing, persistent overconfidence prevailed on the simple quiz, with persistent underconfidence on the difficult quiz. Participants taking the simple quiz on average overestimated the percentage of their peers that they would beat by 18% ($SD = 30\%$); by contrast, participants taking the difficult quiz underestimated the percentage of their peers that they would beat by 14% ($SD = 31\%$), $t(72) = 4.44$, $p < .001$.

Focusing. Like those betting on themselves, those betting on Person A predicted that the protagonist would do better than others on the easy task but worse than others on the difficult task. This result highlights the role of focusing errors in myopic social comparison, and is attributable to the fact that participants made predictions differently for those who were in focus and those who were out of focus. Those out of focus are predicted more regressively than those in focus.

Is this error of myopic social comparison inevitable? If the results of Experiments 1–3 are attributable to attentional focus, then we should be able to influence it by manipulating focus. People who focused less on themselves and more on the opponent should be less likely to commit the error. Experiment 4 introduced such a debiasing manipulation, in which some participants were led to focus on the opponent.

Although the results of Experiments 1–3 are consistent with a focalism explanation for myopic social comparison, an alternative explanation remains. The results of all three experiments show people betting more on simple than on difficult competitions. It may simply be that people enjoy betting more on simple than on difficult competitions. Heath and Tversky (1991) have shown that people prefer to bet in areas where they feel confident and have more knowledge of the uncertainties involved. This is true even holding the expected value of the bets constant (Goodie, 2003). If focusing is indeed the cause, then it should be possible to reduce the effect or even reverse it by manipulating focusing. Experiment 4 tests the focusing explanation by manipulating focusing. Its design replicates that of Experiment 3, but with an additional focusing manipulation.

Experiment 4: Focusing Manipulated

Method

Participants. Participants were 113 individuals recruited by flyers posted around campus and by announcement in classes at Carnegie Mellon University and the University of Pittsburgh. Prospective participants were offered the chance to earn money for experimental participation. Each person who participated was given $4 and the opportunity to bet any portion of the $4 on winning a trivia competition. If the participant won, the wagered portion of the $4 was doubled.

Design. The experiment had a 2 (quiz difficulty: simple vs. difficult) × 2 (protagonist: self vs. random person) × 2 (focus: protagonist vs. opponent) between-subjects design. The focus manipulation varied whether participants' attention was focused on the protagonist (the person on whom they were betting) or the opponent when they made their bets. Given the failure of the subtle prediction manipulation in Experiment 2, we designed a more powerful focusing manipulation for this experiment. The manipulation contained three parts. First, participants were given perspective-taking instructions that asked them to put themselves in the shoes of the person on whom they were to focus. For example, participants who were betting on themselves but focusing on the opponent received the following instructions:

> Before you bet, it may be valuable to spend some time thinking about Person B, against whom you will be competing. Please put yourself in the perspective of Person B. Person B was asked to write a page or less on the topic of "What makes me unique." Please turn the page and read Person B's essay. Think about how they are likely to have done on the trivia quiz. Then turn the page, and as you answer the questions there, imagine how Person B might answer those same questions. Try to visualize Person B as you give your answers.

For the second part of the focusing manipulation, participants reviewed an essay by the person on whom they were focusing, on the topic "What makes me unique." Participants who were focusing on themselves wrote the essay after getting the following instructions:

> Please take a few minutes to write a page or less about yourself on the topic of "What makes me unique." As a starting point, please begin the essay by talking about who you are: your gender, your age, your race, your family background, your home, and your major field of study at the university. You may also want to mention your interests, your skills, and your abilities.

Participants in the other conditions—those who were focusing on the opponent or on Person A—were given an essay written by another participant and were told that it had been written by the person on whom they were focusing. For the third part of the focusing manipulation, participants answered questions about the performance of the in-focus person. The questions asked them to predict absolute performance, predict relative performance, and estimate the probability of that individual winning the competition. All participants then made their bets. After betting, participants were asked the same set of questions about the out-of-focus competitor. Participants were then paid on the basis of the outcomes of their bets.

Results and Discussion

Manipulation check. The manipulation of quiz difficulty was successful. Scores on the simple quiz were significantly higher ($M = 9.47$, $SD = 1.02$) than on the difficult quiz ($M = 1.70$, $SD = 1.25$), $t(111) = 36.29$, $p < .001$. Again, the distributions were nearly nonoverlapping. Only 1 of the 57 participants who took the simple quiz got fewer than 7 out of the 10 questions correct, and none of the 56 participants who took the difficult quiz got more than 5 out of 10 correct.

Bets. We first conducted a 2 (simple vs. difficult) × 2 (betting on self vs. Person A) × 2 (focus on protagonist vs. opponent) ANOVA on bets. The results show a significant main effect of difficulty, $F(1, 105) = 7.67$, $p < .01$. This main effect is qualified by a significant Difficulty × Focus interaction, $F(1, 105) = 84.97$, $p < .001$ (see Figure 4). Planned contrasts reveal that people focusing on the protagonist demonstrated the usual tendency to bet

[3] These results are similar for those betting on self and betting on Person A.

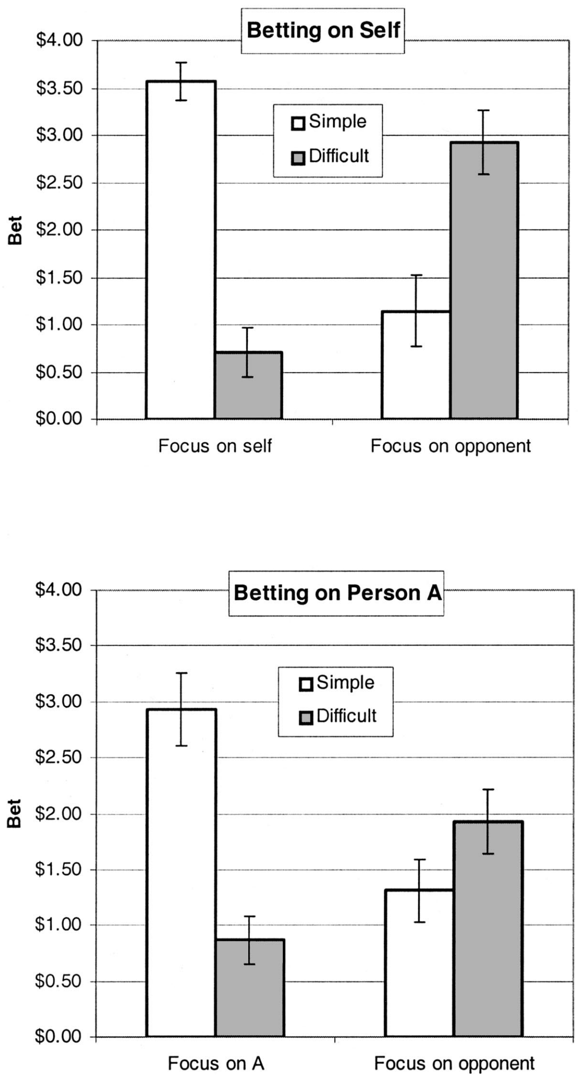

Figure 4. Bets by those betting on self and Person A (Experiment 4). Bars indicate standard errors.

more on the simple (M = \$3.24, SD = \$1.09) than the difficult (M = \$.79, SD = \$.90) quiz, $t(1, 109) = 8.44$, $p < .001$. However, people focusing on the opponent bet significantly more on the difficult (M = \$2.52, SD = \$1.19) than the simple (M = \$1.18, SD = \$1.22) quiz, $t(1,109) = 4.50$, $p < .001$. This two-way interaction is qualified by a significant three-way interaction, $F(1, 105) = 4.35$, $p < .05$. This three-way interaction reflects the fact that the Difficulty × Focus effects are stronger for those betting on themselves than for those betting on Person A, as shown in Figure 4. No other main effects or interactions are significant.

It is worth noting that the effect size associated with the difficulty manipulation (in the standard condition in which people were betting on themselves and focusing on themselves) is substantially larger ($\eta^2 = .74$) than it was in Experiment 1 ($\eta^2 = .15$), Experiment 2 ($\eta^2 = .11$), or Experiment 3 ($\eta^2 = .12$). This difference is likely the result of the fact that although participants tended to focus on themselves in Experiments 1–3, Experiment 4's focusing manipulation reinforced that natural tendency. The significant Difficulty × Focus interaction effect stands in contrast to the weak focusing manipulation used in Experiment 2. The results of the present experiment demonstrate that focusing can be manipulated, but it also took a heavy-handed manipulation to do so. This powerful manipulation appears to have succeeded in leading participants to focus on the opponent, so much so that the results of Experiments 1–3 were reversed, and participants focusing on the opponent bet more on winning competitions based on a difficult quiz than on a simple one. The Difficulty × Focus interaction does not reflect debiasing of the participants focused on the opponent.

Differential weighting. We conducted separate regression analyses on bets for those focusing on the protagonist and those focusing on the opponent. The results appear in Table 4. Experiment 4 replicates the differential weighting effects of Experiments 2 and 3 among those focusing on the protagonist, who weighted the protagonist's score more heavily than the opponent's score in determining their bets. However, this tendency was reversed among those focusing on the opponent, who weighted the opponent's score more heavily than the protagonist's in determining their bets. This last finding seems particularly difficult to account for using an explanation based on egocentrism, and implicates focusing as the cause for differential weighting.

Differential error. Experiment 4 replicated the differential error effects from Experiment 3. Those focusing on the protagonist, like participants in Experiment 3, tended to predict that the protagonist's performance would be more extreme (higher on the simple quiz and lower on the difficult quiz) than would the opponent's performance. But this pattern was reversed among those focusing on the opponent. In a 2 (difficulty) × 2 (focus) × 2 (protagonist: self vs. Person A) × 2 (target: protagonist vs. opponent) mixed ANOVA on predicted scores with repeated measures on target, the predicted Difficulty × Focus × Target interaction is significant, $F(1, 105) = 22.43$, $p < .001$. Figure 5A shows that those focusing on the protagonist replicate the pattern shown in Experiment 3, in which participants' predictions of the opponent are more regressive than are their predictions of the protagonist; this pattern holds both for those betting on self and on Person A. However, as shown in Figure 5B, this difference reverses itself for those focusing on opponent, whose score predictions are more regressive for protagonist than for opponent.[4]

Subadditivity. All participants were asked to report both the probability that the protagonist would beat the opponent and the probability that the opponent would beat the protagonist. Naturally, these should sum to 100%. However, for those taking the simple quiz, these two probabilities summed, on average, to 110% (SD = 28.3%), which is significantly greater than 100%, $t(56) = 2.79$, $p < .05$. For those taking the difficult quiz, these two probabilities summed to 95% (SD = 16.5%), which is significantly less than 100%, $t(55) = -2.21$, $p < .05$ (see Table 5).

General Discussion

Participants in the present experiments stood to benefit from accurate predictions of their performance relative to others in

[4] These results are similar for those betting on self and betting on Person A.

Table 4
Results of Regressions on Participants' Bets Using Predictions of Absolute Performance of Protagonist and Opponent as Independent Variables, Comparing Those Focused on Protagonist and Those Focused on Opponent (Experiment 4)

	Bets	
Independent variable	Focusing on protagonist	Focusing on opponent
Protagonist's score (0–10)	1.51***	0.53*
Opponent's score (0–10)	−0.76**	−0.97**
Adjusted R^2	0.70***	0.26***

Note. Table shows standardized beta weights for independent variables.
* $p < .10$. ** $p < .01$. *** $p < .001$.

general, and their competitors in particular, by betting wisely. However, participants based their predictions on absolute performance of a focal actor even though winning depended exclusively on relative performance. Experiments 1 and 2 showed that people made this error when they were focusing on themselves. Experiment 3 showed that they also made the error when focusing on a randomly selected, unfamiliar protagonist. Experiment 4 showed that they made the error even when they were focusing on their own opponent in the competition. The present results were obtained in a competitive social context in which participants compared individuals against each other, not individuals against group means, and in which they were making predictions of future outcomes, not just retrospective evaluations of evidence.

When making strategic social comparisons, participants focused on the absolute performance of one actor despite the importance of other people and other features of the situation. Participants' bets were relatively insensitive to factors that were out of focus, including the performance of out-of-focus competitors and the hurdle manipulation in Experiment 1, despite their important effects on the probability of winning. The results show that focusing had its effect through two underlying causes: differential error and differential weighting. Differential error tended to increase the regressiveness of predictions regarding those who were out of focus. At the same time, regression analyses show that participants tended to overweight the performance of the focal person in predicting outcomes. In fact, it is possible that differential error may have led to differential weighting. Variance in participants' estimations of the opponent's score was lower than the variance in the estimation of their own scores. This is consistent with the greater regressiveness of estimates of others. It is also consistent with a rational estimate of the opponent's score, given that all participants were facing opponents drawn from the same group. The lower variance in estimates of others' scores would naturally lead it to have a lower regression weight than estimates of their own scores.

Egocentrism Versus Focalism

The results of Experiments 1 and 2 are consistent with errors of both egocentrism and focalism. However, the tendency for participants betting on a randomly selected protagonist in Experiment 3 to bet more on a simple than on a difficult quiz cannot easily be explained by pure egocentrism, and highlights the role of more general focusing errors. Furthermore, when participants focused on their opponents in Experiment 4, patterns in bets as well as in the predicted probability of winning reversed themselves. The power of the focusing manipulation to reverse the effect suggests strongly that focusing is a key driver of the effect.

Other researchers have manipulated focusing by changing the subject of comparison (Eiser et al., 2001; Weinstein & Lachendro, 1982; Windschitl, Kruger, & Simms, 2003). For example, Eiser et al. (2001) asked people to consider performance on a future exam. Some participants were asked how they would perform relative to others. These participants showed more excessive optimism (a stronger above-average effect) than did those who were asked to

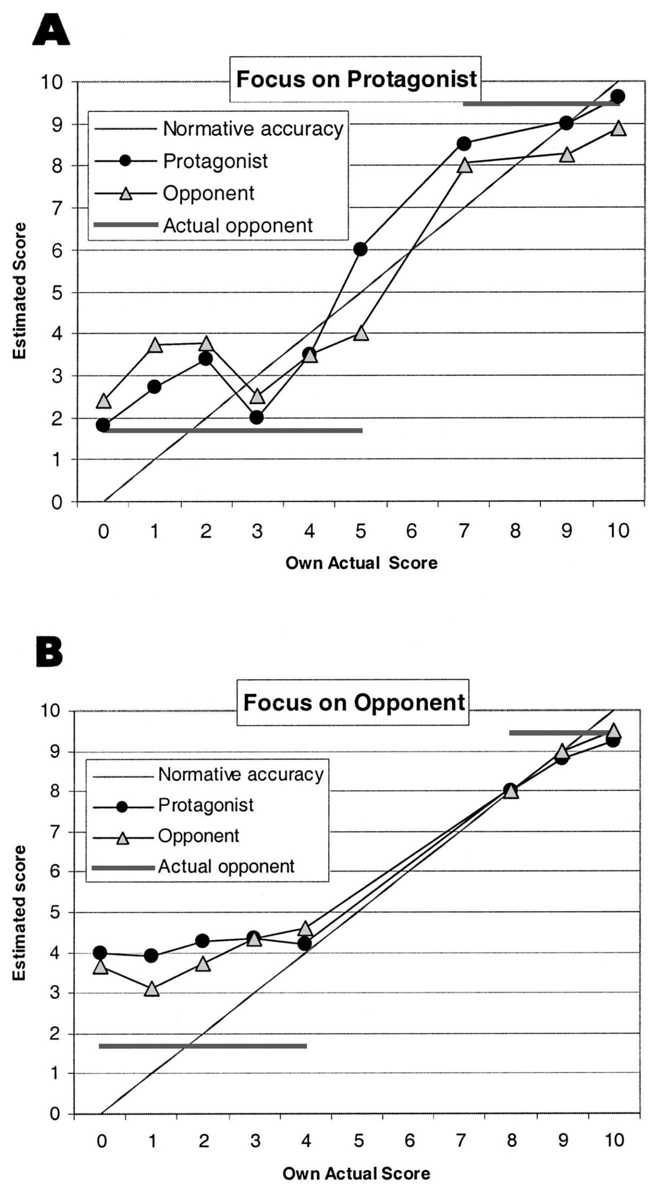

Figure 5. Estimated scores for protagonist and opponent, conditional on participants' actual scores on the trivia quiz (Experiment 4), comparing those focused on the protagonist and those focused on the opponent.

Table 5
Predicted Probabilities of Winning for Protagonist and Opponent (Experiment 4)

	Focus on protagonist		Focus on opponent	
Dependent measure	Difficult	Simple	Difficult	Simple
Probability that protagonist beats opponent	39.9 (19.6)	65.9 (18.8)	51.3 (16.3)	54.9 (19.2)
Probability that opponent beats protagonist	54.2 (17.7)	40.2 (20.5)	44.9 (19.9)	60.1 (23.2)
Summed probability	94.1 (15.6)	106.1 (27.2)	96.2 (17.7)	115.0 (29.1)

Note. Standard deviations are shown in parentheses.

rate others relative to themselves. Similarly, Windschitl et al. (2003) asked the participants in their fourth experiment to estimate the probability of winning a trivia contest against a fellow student. Half the participants estimated the probability that they would beat the other student. The other half estimated the probability that the other student would beat them. They replicated the solo comparison effect shown here among those predicting their own chances of winning: On average, participants predicted that they had only a 17% chance of winning a trivia contest on "indigenous vegetation of the Amazon," but a 61% chance of winning a contest on "fast food chains." However, participants predicted that the other side had a 57% chance of winning a trivia contest on "indigenous vegetation of the Amazon" and a 47% chance of winning a contest on "fast food chains." Because changing the subject of the comparison did not reverse the effect but only weakened it, Windschitl et al. concluded that both egocentrism and focalism were at work.

These manipulations are likely to have had their effect because they induced people to focus on others. But they are relatively subtle manipulations, and their effects tended to be weaker than that of the focusing manipulation in Experiment 4. Although not denying the natural tendency to focus on the self, the results of our Experiment 4 demonstrate that the failure of these other subtle focusing manipulations to reverse the solo comparison effect is not because such reversal is impossible. Instead, the implication is that these earlier manipulations were too subtle to adequately test the hypothesis that the effect is an egocentric one.

Biases in the Assessment of Support for Focal Hypotheses

Support theory (Tversky & Koehler, 1994) addresses the way in which people use descriptions of events to assess their probabilities. Assume that there are two mutually exclusive outcomes, A and B. Imagine that outcome A is the protagonist wins the competition and outcome B is the protagonist loses the competition. Tversky and Koehler (1994) proposed that the judged probability of event A occurring, $P(A, B)$, will depend on the perceived support for the focal hypothesis, $s(A)$, and the perceived support for the alternative, or residual hypothesis, $s(B)$:

$$P(A, B) = \frac{s(A)}{s(A) + s(B)}.$$

So, for example, the probability of winning the competition depends on how well one has done on the quiz and how well one's opponent has done. If support for the focal hypothesis and the residual hypothesis are assessed similarly, then this formula yields sensible probability estimates.

However, Tversky and his colleagues (Brenner, Koehler, & Rottenstreich, 2002; Koehler et al., 1997; Rottenstreich & Tversky, 1997) have documented systematic biases in the way people assess support for hypotheses that include multiple subsidiary hypotheses. Their general finding is that the judged probability of an event depends on the explicitness of its description. Focusing on and elaborating a specific hypothesis can increase its perceived likelihood. When implicit disjunctions are unpacked into their components, the perceived support for them goes up. So, for example, people estimate the probability of death by natural causes at 58%, but estimate the probability of death because of heart disease, cancer, or other natural causes at 73% (Tversky & Koehler, 1994, p. 552).

Our data are consistent with an extension of support theory that Koehler et al. (1997) called the "enhancement effect": the tendency for the total judged probability of a set of mutually exclusive and exhaustive probabilities to increase with the degree to which the evidence is compatible with the hypotheses. High performance on the quiz is compatible with winning, and participants in Experiment 4 judged the summed probability that protagonist and opponent would win as more probable in the simple competition (110%) than in the difficult competition (95%). However, support theory as it was originally articulated would not predict solo comparison effects in binary outcomes. Koehler et al. (1997) explained the enhancement effect on the basis of the packing and unpacking of the residual hypothesis. In Experiments 2–4, each participant was competing against another individual. The residual hypothesis cannot be unpacked in a one-on-one competition. We must turn to other reasons for the observed effects, such as biases in the evaluation of support for nonfocal hypotheses. The present data suggest specifically what these biases might be: differential weighting and differential error.

Overconfidence, Underconfidence, and Differential Error

The present results show participants to be more confident of winning competitions based on simple tests than they are of winning competitions based on difficult tests. This result would seem to conflict with over 25 years of research on overconfidence showing that people are more overconfident of their performance on difficult than on simple problems (Lichtenstein & Fischhoff, 1977; Soll, 1996; see also Gigerenzer, Hoffrage, & Kleinboelting, 1991). The reconciliation of our results with the so-called hard/easy effect in overconfidence comes from distinguishing between absolute overconfidence (e.g., I believe I got six correct when in fact I got three correct) and relative overconfidence (e.g., I believe I beat 70% of my peers, when in fact I beat 50% of them). As Figures 3 and 5 show, our results replicate the standard hard/easy effect in absolute measures of confidence: People tend to overestimate how many questions they answered correctly on the difficult quiz, but tend, if anything, to underestimate the number of questions they got right on the simple quiz. If participants accurately estimate their own scores, then their estimates would fall along the diagonal. However, people estimate their own scores with some error. On very difficult problems (that everyone gets wrong), error will tend to result in an overestimation of one's performance, or apparent overconfidence. On very simple problems, error will tend to lead to underestimation of one's performance, and to apparent underconfidence.

For self-reports of relative standing, persistent overconfidence prevailed on the simple quiz, with persistent underconfidence on the difficult quiz. Participants taking the simple quiz tended to overestimate the percentage of their peers that they would beat and their performance relative to their opponents. By contrast, participants taking the difficult quiz tended to underestimate the percentage of their peers that they would beat as well as their own performance relative to their opponents. It makes sense that people would estimate the performance of others with more error than they would their own performance, and that this accounts for their regressiveness. However, what is striking about the results of the focusing manipulation in Experiment 4 is that those who were focusing on the opponent actually estimated their own performances more regressively than those of their opponents.

As the present results show, despite the fact that competition with others establishes clear incentives to anticipate their behavior correctly, people have trouble doing so. Even in economic contexts in which consideration of others' perspectives is fundamental to determining the rational strategy, people routinely ignore, oversimplify, or disregard others (Ball, Bazerman, & Carroll, 1991; Camerer & Lovallo, 1999; Messick, Moore, & Bazerman, 1997). People seem to assume that the behavior of others is fundamentally unpredictable, even in situations in which their behavior is highly predictable (Beard & Beil, 1994). Essentially, people appear to make predictions of others that assume others will behave more randomly and less predictably than they actually do (Huck & Weizsacker, 2002). Future research will have to explore the question of exactly how it is people think about (or fail to think about) others in these contexts. Is it that people see others' behavior as unknown, and so begin with the simplistic assumption of equal probabilities across all possible outcomes (Bruine de Bruin, Fischhoff, Millstein, & Halpern-Felsher, 2000; Fox & Rottenstreich, 2003)? Or is it simply that others' behavior is predicted with less certainty than one's own? These questions cannot be answered using the data presented here, and answers will depend on the future study of people's beliefs about the behavior of others.

False Consensus and False Uniqueness

The present results contrast with work on false consensus or projection effects (Ross et al., 1977), which shows that people assume others are more similar to themselves than they actually are (Krueger & Clement, 1994). Indeed, false consensus findings are so robust that Krueger and Clement (1994) argued that "the idea that 'most people are like me' may be spontaneous" (p. 609). By contrast, participants in the present experiments made mistakes that suggested they thought others were less like them than they actually were. Reconciling our findings with research on false consensus depends on a clarification of the experimental paradigms used in each. Classic experiments on false consensus held the situation constant and exploited differences between individuals to show that people expected others would see the world as they did. In contrast, our experiments varied the situation and show that people's beliefs about others are insufficiently sensitive to situational influences. The results show that both effects are present simultaneously: People's beliefs about others are correlated with their own behavior, and there are mean differences between their own behavior and their assumptions about the behavior of others.

Clearly, it is not the case that our participants were focusing only on one person and ignoring others completely. Participants were able to specify predictions of performance for both protagonist and opponent, and they appear to have been using that information sensibly: Higher predicted performance by the protagonist was associated with higher bets, and higher predicted performance by opponent was associated with lower bets. However, estimates of the performance of the out-of-focus individual err in two systematic ways. First, participants' predictions of their scores are highly correlated with predictions of the scores of the individual in focus. This assumed similarity is consistent with false consensus and the supposition that others will perform similarly to oneself (Krueger & Clement, 1994; Ross et al., 1977). Second, as described by the differential error effect, participants' predictions of the scores of the person out of focus were regressive. Put another way, they predicted that the performance of the individual in focus would be more extreme (higher scores on the simple quiz and lower scores on the difficult quiz) than would the performance of the person out of focus. This result is consistent with the research on false uniqueness (Perloff & Brickman, 1982), showing that people believe their own personal outcomes, experiences, and abilities to be more exceptional and unique than they actually are.

There are three noteworthy features of these results. The first is that the results display both false consensus and false uniqueness: Participants expected that "others will behave like me, only less so." Although both McFarland and Miller (1990) and Biernat et al. (1997) have shown that simultaneous false consensus and false uniqueness can be displayed by the same individuals, they did so on two different measures. The present results, by contrast, demonstrate false consensus and false uniqueness on the same dependent measure. The second noteworthy feature is that they highlight cognitive, nonmotivational causes. It is easy to imagine why people might want to believe themselves to be happier (Andrews & Withey, 1976), more intelligent (Wylie, 1979), and better drivers (Slovic, Fischhoff, & Lichtenstein, 1977) than average. Although participants' overestimation of relative standing on the simple quiz could serve a self-enhancing function, self-enhancement does not constitute a good explanation for their underestimation of their standing on the difficult quiz. The third noteworthy feature of the results is that they suggest that both false consensus and false uniqueness effects may be moderated by attentional focus. In Experiment 4, the false uniqueness effects shown by those focusing on themselves were reversed among those focusing on the opponent: They reported that the opponent's outcomes would be more extreme than their own. This last implication is particularly noteworthy, because so much of the theorizing regarding both the false consensus effect and false uniqueness effect have centered on their egocentric origins.

Social Comparison Versus Solo Comparison

The results presented here fly in the face of a great deal of research on social comparison. Whereas we show people making solo judgments when comparative judgments are explicitly called for, other research suggests that explicitly solo judgments inevitably elicit comparative social information that compares the person being judged with other people. Research dating back to Festinger (1954) has shown that self-evaluation is fundamentally social and comparative in nature. Asking people to rate themselves on some attribute ("How tall are you?") predictably invites social comparison with others ("Am I taller or shorter than other people?") to construct such a judgment (Mussweiler & Strack, 2000). An American woman who measures 5 feet 9 in. (1.75 m) might see herself as tall, but an American man of the same height would not. In this case, as in innumerable others, social judgment depends crucially on the context of relevant comparison with others. People also rely on comparative social information even when doing so leads them to make apparently dysfunctional choices. For example, when they learn that they would be earning less than others, people reject money-making opportunities that they would otherwise happily accept (Blount, 1995; Blount & Bazerman, 1996; Güth & Tietz, 1990). Blount and Bazerman (1996) offered students $7 for participating in a study, and 72% accepted the invitation. However, when students were offered $8, participation dropped to 54%. Why? Those offered $8 were also informed that some people were being paid $10 for participating in the same study.

By contrast, the present experiments show people focusing on themselves and discounting the social context when asked to make judgments that are fundamentally and inextricably comparative in nature. One possible reconciliation to this discrepancy might address the readiness of the data at one's disposal: When people have clear and immediate information, such as height, they tend to rely on systematic social comparison. However, when people only have ready information about either themselves or others, it is likely that the immediately available information will be put to use and other information will be ignored or underweighted in comparative judgments. There is some support for this view in research showing that the more familiar and individuated the comparison individual is, the less myopic the social comparison (Windschitl et al., 2003). Future research should specify the circumstances under which people rely on comparative social information for judging target individuals and when such information is discounted.

Conclusion

Prior research on social comparison has often assumed that when people are asked to rate themselves relative to others, they do just that. Yet the results presented here show that explicitly comparative judgments are often focused solo judgments. The fact that people make this focusing error in decisions on which they are betting their money suggests that the effect is not easily attributable to lack of motivation. This effect is general and robust enough that it would appear to result from a more profound process: the tendency to focus myopically on a single causal agent and to oversimplify the behavior of others when making comparisons.

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