



Egocentrism and focalism in unrealistic optimism (and pessimism)[☆]

Justin Kruger* and Jeremy Burrus

University of Illinois at Urbana–Champaign, 603 E. Daniel Street, Champaign, IL 61820, USA

Received 1 August 2002; revised 21 April 2003

Abstract

People tend to overestimate their comparative likelihood of experiencing a rosy future. The present research suggests that one reason for this error is that when people compare their likelihood of experiencing an event with that of the average person, they focus on their own chances of experiencing the event and insufficiently consider the likelihood of the average person experiencing the event. As a consequence, people tend to think that they are more likely than the average person to experience common events and less likely than the average person to experience rare events. This causes unrealistic optimism in the case of common desirable events and rare undesirable events, but *unrealistic pessimism* in the case of rare desirable events and common undesirable events (Studies 1 and 2). Study 2 further suggests that both egocentrism and focalism underlie these biases. These results suggest that unrealistic optimism is not as ubiquitous as once thought.

© 2003 Elsevier Inc. All rights reserved.

Keywords: Unrealistic optimism; Unrealistic pessimism; Risk perception; Social comparison; Social judgment; Heuristics and biases

In the late 1970s Neil Weinstein asked 258 students to compare their chances of experiencing several events—some desirable (e.g., live past 80, own home) and some undesirable (e.g., heart attack before age 40, lung cancer)—with that of the average person. If participants were accurate in their assessments, they should, on average, have rated themselves as just as likely to experience the event as the average person. They did not. On average, participants estimated that they were more likely than the average student to experience the desirable events and less likely than the average student to experience the undesirable events (Weinstein, 1980).

Weinstein's results were (and are) exciting because they made two very important points about human judgment. The first was that people seem to be unrealistically optimistic about the future. The second was that people seem to possess a remarkable capacity to believe what they want to believe. Each insight had a consid-

erable impact on social and personality psychology. The finding of unrealistic optimism stimulated substantial research—both theoretical and applied—examining the causes and consequences of this bias (according to a bibliography by Weinstein (1998), the number of articles on unrealistic optimism exceeds 300). As well, the implication that people are self-serving in their judgments has formed the basis of several models of human judgment (Alicke, 1985; Brown, 1990; Campbell, 1986; Kunda, 1990; Kunda & Sanitioso, 1989; Taylor & Brown, 1988; Weinstein & Klein, 1996).

We suspect, however, that there is a non-motivational component to unrealistic optimism. We submit that when people compare their likelihood of experiencing an event with that of the average person, they focus on their own likelihood of experiencing the event (how likely am I to live past 80?) and insufficiently consider the chances of the average person experiencing the event (how likely is *the average person* to live past 80?). As a consequence, the answer to the question “How likely am I to experience the event in comparison with the average person?” is based far more on people's assessments of their own chances of experiencing the event than on their assessment of the average person's chances of experiencing the event.

[☆] We thank two anonymous reviewers for their helpful suggestions. This research was supported by Research Grant 1-2-69853 from the University of Illinois Board of Trustees awarded to Justin Kruger.

* Corresponding author. Fax: +217-244-5876.

E-mail addresses: jkruger@uiuc.edu (J. Kruger), jburrus@uiuc.edu (J. Burrus).

We base our predictions, at least in part, on several recent findings in the judgment literature in which an analogous tendency has been demonstrated in other social comparisons. For instance, when people compare their abilities with those of their peers, they focus far more on their own abilities than on their peers' abilities (Kruger, 1999). Similarly, people's assessments of how happy they are compared with others tend to be based on their own life satisfaction, with little regard to the life satisfaction of the average person (Diener & Fugita, 1997; Klar & Giladi, 1999). In much the same way, we argue—and for much the same reason—people tend to base their predictions of their comparative likelihood of experiencing an event more on their own chances of experiencing the event than on their peers' chances of experiencing the event. Indeed, part of Weinstein's original account of unrealistic optimism emphasized the egocentric tendency of individuals to fail to adequately consider the risks (or lack thereof) facing the comparison group (Weinstein, 1980; Weinstein & Lachendro, 1982).

This suggests that the tendency to see one's own future as more or less rosy than the average person's ought to depend on the rarity of the event in question. When considering common events, events such as owning a home or living past 80, the tendency to focus on one's own likelihood of experiencing the event when making social comparisons is likely to leave people with the impression that they are more likely to experience the event than the average person. Most people, after all, will own their own home sometime in their lifetime (at least in the United States), and most have a reasonable shot at seeing 80. Of course, the same (by definition) is true of the average person. However, if people ignore this latter fact, then they are likely to overestimate their comparative likelihood of experiencing the event—not merely because it is desirable, but because it is common. If so, then the reverse ought to be true of desirable events that are rare. Whereas people should be unrealistically optimistic about their relative chances of owning a home or living past 80, they ought to be unrealistically *pessimistic* about their chances of, say, owning an *island* or living past 100—despite the fact that the latter may be just as desirable (if not more) than the former.

A similar, albeit mirror, logic applies to events that are rare. If people focus on their own likelihood of experiencing an event when making comparative predictions, then they ought to see themselves as less likely than the average person to experience rare events. In the case of undesirable events, this implies unrealistic optimism. People are likely to underestimate their comparative likelihood of getting lung cancer or having a heart attack before age 40 not only because those events are undesirable, but because they are rare. If so, people may be unrealistically pessimistic about the far more com-

mon events of, say, getting the *flu* or having one's heart *broken* before age 40—despite one's wishes to the contrary.

The existing literature provides some support for these assertions. A number of researchers have found that event rarity is a reliable predictor of unrealistic optimism (Eiser, Pahl, & Prins, 2001; Price, Pentecost, & Voth, 2002; Weinstein, 1987, 1980; Weinstein & Lachendro, 1982). However, in none of these studies was egocentrism found to engender systematic unrealistic pessimism. One exception is a recent study by Blanton, Axsom, McClive, and Price (2001), who found unrealistic pessimism in participants' comparative predictions of how they would cope with several negative events should they occur, and provided an egocentric account not unlike the one offered here and by Kruger (1999). However, these researchers did not investigate the role of egocentrism in predictions about whether the events would *occur*, the focus of the present research.

Study 1

Participants in Study 1 compared their likelihood of experiencing 28 events with that of the average person. Half of the events were desirable and half were undesirable, and of these, half were common and half were rare. In addition to making direct social comparisons, participants also provided separate estimates of their own and the average person's likelihood of experiencing the event.

We predicted, first, that when directly comparing themselves with the average person, participants would tend to see themselves as more likely than the average person to experience the common events and less likely than the average person to experience the rare events—regardless of event desirability. Second, we predicted that participants' comparative ratings would be predicted far better by their assessment of their own likelihood of experiencing the event than by their assessment of the average person's likelihood of experiencing the event.

Method

Participants

Fifty University of Illinois students (24 women, 25 men, and 1 unidentified) enrolled in an introductory course in psychology earned partial course credit for participating.

Procedure

Participants completed a questionnaire in which 28 events were described. For each event, participants compared their likelihood of experiencing the event in comparison with the average person from their course

Table 1
Unrealistic optimism and pessimism in direct comparisons by event rarity and desirability, Study 1 ($n = 50$)

Common events		Rare events	
Event	Likelihood estimate	Event	Likelihood estimate
<i>Desirable events</i>			
Owning own car	+1.24**	Owning own airplane	-1.26**
Starting salary >\$25,000	+1.08**	Starting salary >\$250,000	-0.58*
Owning own home	+1.02**	Owning own island	-1.04**
Living past 70	+0.80**	Living past 100	-0.16
Work recognized w/award	+0.42*	Work recognized w/Nobel Prize	-1.24**
Graduating in top 1/2 of class	+0.78**	Graduating in top 1% of class	-0.82**
Traveling to Europe	+0.56*	Traveling to the Moon	-1.26*
<i>Mean</i>	<i>+0.84**</i>	<i>Mean</i>	<i>-0.91**</i>
<i>Undesirable events</i>			
Ticket for driving too fast	+0.70**	Ticket for driving too slow	-1.20**
Gaining 5 lbs in next 10 years	+0.20	Gaining 5 lbs in the next week	-1.02**
Catching flu in next 4 years	+0.34	Catching flu in the next 2 weeks	-0.74**
Involved in an auto accident	+0.14	Involved in a boating accident	-1.49**
Heart broken before age 40	+0.58**	Heart attack before age 40	-0.70**
Falling behind in schoolwork	+0.08	Falling behind in dental hygiene	-1.68**
Painful treatment by a dentist	-0.22	Painful treatment by acupuncturist	-1.66**
<i>Mean</i>	<i>+0.26**</i>	<i>Mean</i>	<i>-1.21**</i>

Mean estimates after subtracting 4, the midpoint of the scale corresponding to average. Positive numbers indicate a greater-than-average perceived likelihood of experiencing the event, negative numbers indicate a less-than-average perceived likelihood of experiencing the event.

* $p < .05$.

** $p < .01$.

on a scale from 1 (*much less likely to happen to me*) to 7 (*much more likely to happen to me*). Next, participants estimated the likelihood that the event would happen to them and (separately) the average person from their class on a scale from 1 (*very unlikely*) to 7 (*very likely*).

Of the 28 events, half were desirable and half were undesirable, and half were common and half were rare (for a total of 7 events per category). Rarity was manipulated by changing a key element of the event such as time span (e.g., “gaining 5 lbs in the next 10 years” vs. “gaining 5 lbs in the next *week*”) or some other characteristic relevant to baserates (e.g., “involved in auto accident” vs. “involved in *boating* accident”), but without changing whether the event was desirable or undesirable (see Table 1).¹

Results

Gender did not influence the results of this or the next study and is not discussed further.

Our first prediction was that participants would tend to see themselves as more likely than the average person to experience the common events and less likely than the

average person to experience the rare events. As can be seen, our predictions were directionally confirmed in 27 of the 28 events, and to a statistically significant degree in 22 of them.

Of key importance, this was true regardless of whether the events were desirable or undesirable. As Table 1 shows, participants thought that they were more likely than the average person to experience the common desirable events, but also more likely than the average person to experience the common *undesirable* events. As well, participants thought that they were less likely than the average person from their class to experience not only the rare undesirable events, but also the rare *desirable* events.

These results follow from the notion that when people compare their likelihood of experiencing an event with that of the average person, they focus on their own likelihood of experiencing the event and insufficiently consider the likelihood of the average person experiencing the event. An additional test of this explanation is provided by contrasting the correlations between these three variables. Specifically, if people focus on their own likelihood of experiencing an event when making comparative predictions, then self-estimates should account for more variance in direct comparisons than should peer-estimates.

To find out whether this was the case, for each participant we computed two partial correlation coefficients: one between self-estimates and direct comparisons holding constant peer-estimates, and the other between peer-estimates and direct comparisons holding

¹ The event categorizations in Studies 1 and 2 were verified by a separate group of 103 participants who rated the desirability and rarity of each event. Averaging the 7 (in Study 1) or 9 (in Study 2) events within each category, the rare events were seen as significantly less common than the common events, and the desirable events were seen as significantly more desirable than the undesirable events (all $ps < .001$). As well, each category fell significantly above or below the midpoint of the scale (all $ps < .001$).

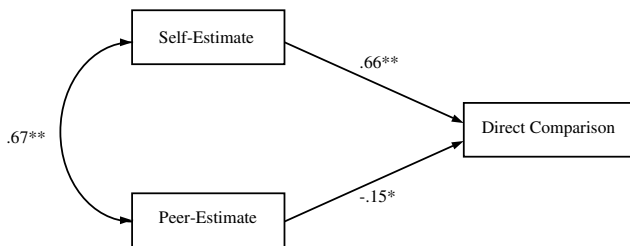


Fig. 1. Mean correlations and partial correlations between self-estimates, peer-estimates, and direct comparisons (Study 1). * $p < .05$ ** $p < .01$.

constant self-estimates. The former provides an estimate of the weight placed on one's own likelihood of experiencing the event when making self vs. other comparisons, and the latter provides an estimate of the weight placed on the average person's likelihood of experiencing the event when making self vs. other comparisons. As Fig. 1 reveals, although both relationships were reliable (i.e., the mean partial correlations exceeded the null of zero by separate one-sample t tests), participants placed far greater weight on their own likelihood of experiencing the event when making direct comparisons than on the likelihood of the average person experiencing the event. This difference was confirmed by a paired t test (after reverse scoring the latter correlations to enable an appropriate comparison) $t(49) = 9.67$, $p < .001$, $d = 1.38$.²

This is not to say that the desirability of the event had no influence on predictions. A 2 (common vs. rare) \times 2 (desirable vs. undesirable) ANOVA revealed that in addition to the predicted main effect for event rarity, $M_{\text{common}} = 0.45$ vs. $M_{\text{rare}} = -1.06$, $F(1, 49) = 103.08$, $p < .001$, $\eta^2 = .68$, there was also a significant (albeit much weaker) main effect for event desirability, $M_{\text{desirable}} = -0.03$ vs. $M_{\text{undesirable}} = -0.48$, $F(1, 49) = 7.73$, $p < .001$, $\eta^2 = .14$ (but no interaction). These data are consistent with the notion that egocentrism and motivated reasoning may each contribute to bias in predictions about the future, consistent with Weinstein's original account (1980).

Our final set of analyses concerned the pattern of data when unrealistic optimism is calculated indirectly, by subtracting peer-estimates from self-estimates. Whereas direct comparisons are likely to involve the egocentric overweighting of the self at the exclusion of the comparison group, indirect comparisons are likely to short-circuit that egocentrism by forcing individuals to consider the comparison group (see Price et al., 2002 for a similar argument). If so, then the biases engendered by

egocentrism should disappear in the case of indirect comparisons. What should remain? Assuming that motivated reasoning is another important component in predictions about the future, we would expect the more typical pattern of unrealistic optimism.

That is precisely what we found. The difference between self-estimates and peer-estimates was positive when the event was desirable ($M_{\text{common}} = 0.85$, $M_{\text{rare}} = 0.19$), and negative when the event was undesirable ($M_{\text{common}} = -0.32$, $M_{\text{rare}} = -0.77$). Repeating the ANOVA reported above, we observed a main effect for both rarity and desirability, $F(1, 49)s = 27.07$ and 40.68 , $ps < .001$, $\eta^2s = .35$ and $.45$, respectively.

Discussion

The results of Study 1 suggest that when people compare their likelihood of experiencing an event with that of the average person, they focus on their own likelihood of experiencing the event and underweight the likelihood of the average person experiencing the event. As a result, participants thought that they were more likely than the average person from their class to experience the common events and less likely than the average person to experience the rare events—regardless of whether those events were desirable or undesirable. Thus, whereas participants were unrealistically optimistic about their comparative likelihood of experiencing the common desirable events and rare undesirable events, they were unrealistically pessimistic about their chances of experiencing the rare desirable events and the common undesirable events.

Note that participants did not ignore the comparison group completely, however: As Fig. 1 shows, participants' estimates of the comparison group uniquely and significantly contributed to their social comparison judgments. This is consistent with some work in the judgment literature (Kruger, 1999; Windshittl, Kruger, & Simms, 2003), but not all (Klar & Giladi, 1997; Klar, Medding, & Sarel, 1996). Although we feel that the evidence suggesting that people consider the comparison group when they make social comparisons outweighs the evidence that they do not, a more formal meta-analytical treatment of these data are necessary before strong statements on the subject can be made.

There are, however, several caveats to Study 1. First, although unrealistic pessimism was reliable, it was significant for only two of the seven common undesirable events (see Table 1). Second, the assumption that mean estimates above or below the midpoint of the scale reflect bias may not be tenable for some of the items. In extremely skewed distributions, for instance, it is possible for most people to be above or below the arithmetic mean (cf., Colvin, Block, & Funder, 1995; Robins & John, 1998). Finally, the correlational analyses reported in Fig. 1 assumes that the self and average person ratings

² For this and all tests in this paper involving correlation coefficients, we report the raw correlations but analyze the Fisher r -to- z transformed values.

are absolute and independent of one another. To the extent that people use their relative standing to inform their absolute standing (cf., Festinger, 1954), that assumption may be flawed as well. Study 2 was thus designed in part to rule out these alternative interpretations.

Study 2

Why do people focus on their own likelihood of experiencing an event when making comparative predictions? One reason stems from what might be termed *egocentrism*, the notion that the self figures more prominently in judgment than do others (Inhelder & Piaget, 1958; Ross & Ward, 1996; Ross & Sicoly, 1979). Because people typically have more information about themselves than they have about others, information about the self is likely to be more accessible, and thus more likely to be automatically and spontaneously retrieved, than information about others (Fenigstein, 1984; Kruger, 1999; Kuiper & Rogers, 1979; Markus, 1977; Ross & Sicoly, 1979; Srull & Gaelick, 1983). Just as our own dishwashing sticks out more than our spouse's when we estimate our relative contribution to the chore (Ross & Sicoly, 1979), so, too, might our own likelihood of traveling to Europe stick out more than the average person's when we estimate our relative likelihood of experiencing the event.

A second reason self-assessments might have greater impact than comparison-group estimates stems from what might be termed *focalism*, or the tendency for focal hypotheses to receive greater weight than non-focal hypotheses (Klar & Giladi, 1997; Klayman & Ha, 1987; Schkade & Kahneman, 1998; Wilson, Wheatley, Meyers, Gilbert, & Axson, 2000; Windshittl et al., 2003). When comparing the probability of X occurring with the probability of Y occurring, X is the focal hypothesis, and as such, X is likely to receive greater weight than the non-focal hypothesis Y. If so, then the self may receive greater weight in self vs. other comparisons not because of the greater availability of self-relevant information (the egocentrism account), but merely because the self is the target of the comparison (the focalism account).

A way to tease these two accounts apart, then, is simply to vary the target of comparison (cf., Hoorens, 1995; Hoorens & Buunk, 1995; Otten & Van der Pligt, 1996). If focalism underlies the effect, then the tendency of individuals to focus on themselves should be reduced, eliminated, or reversed when the target of the comparison is the average person rather than the self. If egocentrism underlies the effect, then the tendency to focus on the target of the comparison should be greater when the target is the self than when the target is the average person.

Method

Participants

One hundred and one University of Illinois students (57 women, 41 men, and 3 unidentified) enrolled in an introductory course in psychology earned partial course credit for participating.

Procedure

As in Study 1, participants estimated their own and the average student's likelihood of experiencing several events, as well as their comparative likelihood of experiencing each event. For half of the participants, the target of the comparison was the self (how likely are *you* to experience the event compared with the average person?), and for the other participants, the target of the comparison was the average person (how likely is *the average person* to experience the event compared with you?).

The remaining changes were designed to address the limitations of Study 1 raised earlier. First, we doubled the sample size and increased the number of items in order to test the reliability of the unrealistic pessimism observed in Study 1. Second, participants compared themselves with the *median* student, that is, someone in the exact middle, or 50th percentile, of the distribution. Specifically, participants were asked to compare themselves with someone who was more likely than about half of University of Illinois students to experience the event, and less likely than about half of University of Illinois students to experience the event. Although a seemingly trivial change, this was necessary in order to rule out an artifactual interpretation of the biases observed in Study 1. Whereas it is possible (in some distributions) for more people to be above the arithmetic mean than below it, it is *impossible* for more people to be above the median than below it. Third, we changed the scale on which the absolute ratings were solicited from a 1 (*very unlikely*) to 7 (*very likely*) Likert-type scale, which might be interpreted as a social comparison estimate (i.e., participants may have interpreted the question to mean "how likely am I to experience the event compared with others?"), to an open-ended question about the percent likelihood that the individual would experience the event (e.g., "1%," "85%," "99.9%"). Presumably, the latter cannot be interpreted as a social comparison. Finally, we counterbalanced question order: half of the participants rated their own absolute likelihood, then their own (or the median person's) comparative likelihood, and then the median person's likelihood of experiencing the event, and the others made these ratings in reverse-order.

Results

The order in which participants made their ratings did not change the pattern of results and is not discussed further.

Replication

Our first question was whether the effects of Study 1 replicated, which can be tested by focusing exclusively on the direct comparisons of participants who compared themselves with the median person (rather than the reverse). As the first and third data columns of Table 2 reveal, these participants did indeed think that they were more likely than the median person to experience the common events and less likely than the median person to experience the rare events. This was directionally true in 35 of the 36 of the events, and significantly so in 31 of them. Comparing the proportion of people who claimed to be above versus below the median yielded a similar pattern: the difference was in the predicted direction for all 36 events, and that difference was significant (by separate sign tests) in 29 of them, despite the reduction in power. Unlike Study 1, although a 2 (common vs. rare) × 2 (desirable vs. undesirable) ANOVA revealed the predicted main effect for event rarity, $M_{\text{common}} = 1.17$, $M_{\text{rare}} = -1.59$, $F(1, 48) = 125.43$, $p < .001$, $\eta^2 = .72$, and an interaction, $F(1, 48) = 9.61$, $p = .003$, $\eta^2 = .17$, there was no main effect of event desirability, $F < 1$.

As in Study 1, unrealistic pessimism disappeared when it was calculated indirectly. On average, participants' estimates of the percent likelihood that they would experi-

ence the event exceeded their estimates of the percent likelihood that the median person would experience event when it was desirable ($M_{\text{common}} = 7.84$, $M_{\text{rare}} = 1.82$), whereas the opposite was true when the event was undesirable ($M_{\text{common}} = -1.23$, $M_{\text{rare}} = -4.27$). A 2 (common vs. rare) × 2 (desirable vs. undesirable) ANOVA revealed two main effects and an interaction, all $ps < .001$, all $\eta^2s > .22$.

Egocentrism versus focalism

Our primary prediction, however, concerned the target manipulation. If focalism is one reason people focus on their own likelihood of experiencing an event when comparing themselves with their peers, then this tendency should be reduced, eliminated, or reversed when the target of the comparison is the median person. If egocentrism explains part of the effect, then the tendency to focus on the target of the comparison should be greater when the target is the self than when the target is the median person.

We tested these predictions by repeating the correlational analyses performed in Study 1. Specifically, for each participant we computed the correlation between self-estimates and direct comparisons holding constant peer-estimates, and the other between peer-estimates and

Table 2
Unrealistic optimism and pessimism in direct comparisons by event rarity, desirability, and target condition, Study 2 ($n = 101$)

Common events			Rare events		
Event	Target of Comparison		Event	Target of Comparison	
	Self	Average student		Self	Average student
<i>Desirable events</i>					
Owning own car	+1.73**	+0.98**	Owning own airplane	-1.25**	-0.46**
Starting salary >\$25,000	+2.00**	+0.60*	Starting salary >\$250,000	-1.52**	+0.18
Owning own home	+1.59**	+0.64**	Owning own island	-2.04**	-0.44
Living past 70	+1.19**	+0.34 ^a	Living past 100	-0.55 ^a	-0.68**
Work recognized w/award	+0.76*	+0.94**	Work recognized w/Nobel Prize	-2.65**	-0.20
Graduating in top 1/2 of class	+1.90**	+0.12	Graduating in top 1% of class	-1.84**	-0.54
Traveling to Europe	+1.00**	+0.28	Traveling to the Moon	-2.61**	-0.22
Graduate with > 3.0 GPA	+1.69**	+0.02	Graduate with 4.0 GPA	-1.71**	-0.42
No night in hospital for 5 years	+0.51 ^a	-0.02	No night in hospital for 50 years	-0.92**	-0.84**
<i>Mean</i>	+1.37**	+0.43*	<i>Mean</i>	-1.63**	-0.40
<i>Undesirable events</i>					
Ticket for driving too fast	+1.55**	+0.64*	Ticket for driving too slow	-2.31**	-0.49
Gaining 5 lbs by age 50	+0.49	+1.54**	Gaining 5 lbs in 5 days	-1.49**	+0.02
Heart broken by lover	+1.06**	+0.54 ^a	Heart broken by coworker	-0.67*	+0.24
Taking class you don't like	+1.22**	+1.06**	Taking class parents don't like	-0.20	+0.22
Regretting 20 days of life	-0.08	+0.72**	Regretting 20 years of life	-2.88**	-0.28
Stressed out before exam	+1.37**	+1.20**	Stressed out before election	-0.98**	+0.34
Family member dies	+0.98**	+0.72*	Family member disowns you	-2.18**	+0.10
Relationship doesn't last	+0.88**	+0.84**	Needing braces in old age	-1.47**	-0.20
Disappointing exam grade	+1.31**	+0.84*	Disappointing work evaluation	-1.31**	+0.61**
<i>Mean</i>	+0.98**	+0.90**	<i>Mean</i>	-1.50**	+0.06

Positive numbers indicate a greater-than-average perceived likelihood of the target experiencing the event, negative numbers indicate a less-than-average perceived likelihood of the target experiencing the event.

^a $p \leq .10$.

* $p < .05$.

** $p < .01$.

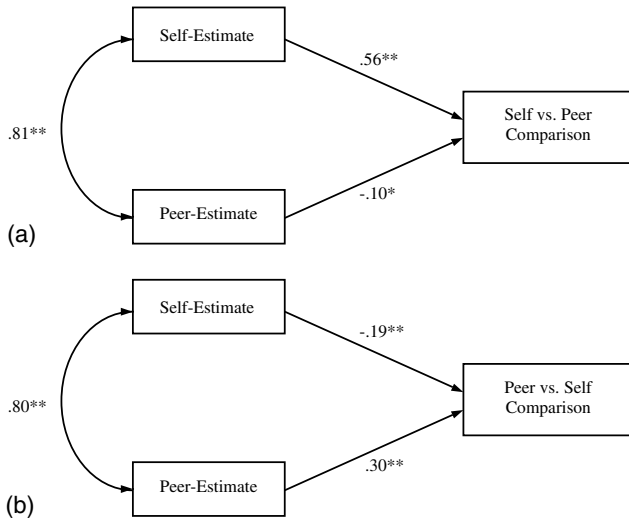


Fig. 2. Mean correlations and partial correlations between self-estimates, peer-estimates, and direct comparisons (Study 2). Fig. 2a displays the relationship when the self was the target of the comparison, and Fig. 2b when the median person was the target of the comparison. * $p < .05$ ** $p < .01$.

direct comparisons holding constant self-estimates. These correlations are presented in Fig. 2, separated by condition.

As can be seen, these data provide strong support for both the egocentrism and focalism accounts. First, the tendency of individuals to base their comparative predictions primarily on their assessment of their own likelihood of experiencing the event was eliminated—indeed, reversed—when participants compared themselves with the median person (Fig. 2a) versus when they compared the median person with themselves (Fig. 2b), consistent with the focalism account. This reversal was verified by comparing the partial correlation coefficients in a 2 (target of comparison: self vs. median person) ANOVA (after first reverse-scoring the referent of the comparison so that higher numbers reflect a greater judgmental weight), which revealed a significant interaction, $F(1, 97) = 61.78, p < .001, \eta^2 = .39$. However, this analysis also revealed a significant main effect for the target of comparison independent variable, $F(1, 97) = 23.40, p < .001, \eta^2 = .19$, indicating that overall, participants based their comparative ratings on self-assessments more than peer-assessments, consistent with the egocentrism account. Additional evidence for the egocentrism account is the fact that the tendency to focus on the target of the comparison was greater when the target was the self than when the target was the median person, $F(1, 99) = 20.62, p < .001, \eta^2 = .18$.

Discussion

The results of Study 2 extend the results of Study 1 in several meaningful ways. First, all three basic effects

observed in Study 1 were replicated in Study 2, including unrealistic pessimism for common undesirable events. Second, this was true regardless of whether estimates were compared with a null of zero (i.e., whether on average, participants claimed to be above-average), or whether the proportion of individuals claiming to be above the median was compared with the proportion of individuals claiming to be below. The latter finding helps rule out an artifactual interpretation of the data, because whereas it is possible in some distributions for most people to be above-average, it is impossible for more people to be above the median than below it. Third, as Fig. 2a reveals, the tendency of individuals to focus on their own standing when estimating their comparative likelihood was replicated with a purely absolute measure of likelihood, thus ruling out the possibility that the differential predictive utility of the self- and peer-ratings might be caused by interdependence between the two. Finally, and most important, Study 2 helped explain why people focus on their own absolute likelihood when estimating their comparative likelihood, suggesting that focalism and egocentrism each independently contribute to the effect.

General discussion

The results reported in this paper converge on several points about how people make predictions about the future. First, when people compare their likelihood of experiencing an event with that of the average person, they focus on their own likelihood of experiencing the event and give considerably less weight to the likelihood of the average person experiencing the event. In both studies, participants' judgments of how they compared with their peers were predicted far better by their self-predictions than their peer-predictions. As a consequence, participants rated themselves as more likely than the average person to experience common events and less likely than the average person to experience uncommon events—independent of the desirability of the event in question. This is consistent with recent work by Chambers, Windschitl, and Suls (in press), who found that when people estimate their likelihood of experiencing an event within a certain time frame compared with that of the average person, they tend to rate themselves as less likely to experience the event when that time frame is extremely short (e.g., 3 h) and more likely to experience the event when the time frame is extremely long (e.g., 30 years). Further consistent with the present work is the fact that these researchers also found that this bias was borne of the egocentric tendency to focus on one's own rather than the average person's likelihood of experiencing the event.

The present results also shed light on some of the causes of this egocentrism (although doubtless not all).

Study 2 suggested that one reason is simply that the self is the target of the comparison. When the target of the comparison was the median person, the tendency to focus on the self disappeared (see Fig. 2b). This is consistent with the notion that focal hypotheses (in this case, the target of the comparison) receive greater judgmental weight than non-focal hypothesis (Klayman & Ha, 1987; Schkade & Kahneman, 1998; Wilson et al., 2000, 2000), as well as specific theorizing by Klar and Giladi (1997), who argued that when people compare a singular target with a generalized target, people mainly focus on the perceived qualities of the singular target and do not sufficiently consider those of the generalized target. However, Study 2 also suggests that focalism is not the whole story. On average, the tendency to focus on the self was greater than the tendency to focus on one's peers, and the tendency to focus on the target of the comparison was greater when the target was the self than when it was a peer, both of which are consistent with the notion that part of the effect may stem from the hyper-accessibility of the self (Srull & Gaelick, 1983).

Although our data cannot be explained by motivated reasoning, it would be misleading to suggest that the motive to think positively about the self does not contribute to unrealistic optimism. Indeed, although not central to our hypothesis, in Study 1 we found that independent of event rarity, participants tended to think that the desirable events were more likely to occur than the undesirable events, consistent with motivated reasoning. Unrealistic predictions about the future thus appear to be like many other judgments, in that they are multiply determined by both motivated/"hot" factors and "cold"/information-processing factors (Gilovich, 1991; Kunda, 1999).

One paradoxical aspect of our results is the disconnect between the direct and indirect measures of unrealistic optimism: On the very events in which participants' direct comparisons indicated unrealistic pessimism, such as the common/undesirable events listed in Tables 1 and 2, their separate self- and peer-ratings suggested unrealistic optimism. As well, we found that simply reversing the target of the comparison attenuated or reversed the optimism displayed in direct comparisons. Although these findings fit with other research on the plasticity and context dependency of judgment (Dawes, 1998; Schwarz, Groves, & Schuman, 1998), one cannot help but wonder which is the "real" judgment. Presumably one cannot both overestimate *and* underestimate one's comparative likelihood of experiencing the same event.

Although future research awaits an answer to this question, we suspect that both judgments are "real" in the sense that they each correspond to a genuine psychological reality, and each may have important (although perhaps different) real-world consequences for emotion, choice, and behavior. Some support for this

assertion comes from a re-analysis of Study 2. In addition to predicting the future, participants also completed a measure of self-esteem (Rosenberg, 1965), a factor that has long been thought to be associated with unrealistic optimism (Taylor & Brown, 1988). Consistent with prior work, we found that unrealistic optimism was a reliable predictor of self-esteem. Of key importance, this was true regardless of whether that optimism was calculated directly, $r = .24$, $p = .014$, or indirectly, $r = .27$, $p = .007$. We are reminded of the distinction in a number of literatures between implicit and explicit processes that occasionally diverge, yet nevertheless independently predict important behavioral and judgmental outcomes (e.g., Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Wilson, Lindsey, & Schooler, 2000).

Perhaps the most important question posed by the present research, however, is whether people tend to be unrealistically optimistic about the future, a conclusion that (for Westerners, at least) was assumed to be forgone. In both studies, the tendency to focus on one's own rather than the average person's likelihood of experiencing an event engendered systematic unrealistic pessimism in the case of rare desirable events and common undesirable events. These data suggest that unrealistic optimism is not as ubiquitous as once thought.

References

- Alicke, M. D. (1985). Global self-evaluation as determined by the desirability and controllability of trait adjectives. *Journal of Personality and Social Psychology*, *49*, 1621–1630.
- Blanton, H., Axsom, D., McClive, K. P., & Price, S. (2001). Pessimistic bias in comparative evaluations: A case of perceived vulnerability to the effects of negative life events. *Personality and Social Psychology Bulletin*, *27*, 1627–1636.
- Brown, J. D. (1990). Evaluating one's abilities: Shortcuts and stumbling blocks on the road to self-knowledge. *Journal of Experimental Social Psychology*, *26*, 149–167.
- Campbell, J. D. (1986). Similarity and uniqueness: The effects of attribute type, relevance, and individual differences in self-esteem and depression. *Journal of Personality and Social Psychology*, *50*, 281–294.
- Chambers, J. R., Windschitl, P. D., & Suls, J. (in press). Egocentrism, event frequency, and unrealistic optimism: When what happens frequently is "more likely to happen to me." *Personality and Social Psychology Bulletin*.
- Colvin, C. R., Block, J., & Funder, D. C. (1995). Overly positive self-evaluations and personality: Negative implications for mental health. *Journal of Personality and Social Psychology*, *68*, 1152–1162.
- Dawes, R. (1998). Behavioral decision making and judgment. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 497–548). New York: Oxford University Press.
- Diener, E., & Fugita, F. (1997). Social comparisons and subjective well-being. In B. P. Buunk & F. X. Gibbons (Eds.), *Health, coping, and well-being: Perspectives from social comparison theory* (pp. 329–357). Mahwah, NJ: Erlbaum.
- Dovidio, J. F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology*, *33*, 510–540.

- Eiser, R. J., Pahl, S., & Prins, Y. (2001). Optimism, pessimism, and the direction of self–other comparisons. *Journal of Experimental Social Psychology*, 37, 78–84.
- Fenigstein, A. (1984). Self-consciousness and the overperception of self as a target. *Journal of Personality and Social Psychology*, 20, 231–245.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117–140.
- Gilovich, T. (1991). *How we know what isn't so: The fallibility of human reason in everyday life*. NY: The Free Press.
- Hoorens, V. (1995). Self-favoring biases, self-presentation, and the self–other asymmetry in social comparison. *Journal of Personality*, 63, 793–817.
- Hoorens, V., & Buunk, B. P. (1995). Social comparison of health risks: Locus of control, the person-positivity bias, and unrealistic optimism. *Journal of Applied Social Psychology*, 23, 291–302.
- Inhelder, B., & Piaget, J. (1958). *The growth of logical thinking from childhood to adolescence*. New York: Basic Books.
- Klar, Y., & Giladi, E. E. (1997). No one in my group can be below the group's average: A robust positivity bias in favor of anonymous peers. *Journal of Personality and Social Psychology*, 73, 885–901.
- Klar, Y., & Giladi, E. E. (1999). Are most people happier than their peers, or are they just happy? *Personality and Social Psychology Bulletin*, 25, 585–594.
- Klar, Y., Medding, A., & Sarel, D. (1996). Nonunique invulnerability: Singular versus distributional probabilities and unrealistic optimism in comparative risk judgments. *Organizational Behavior and Human Decision Processes*, 67, 229–245.
- Klayman, J., & Ha, Y. (1987). Confirmation, disconfirmation, and information in hypothesis testing. *Psychological Review*, 94, 211–228.
- Kruger, J. (1999). Lake Wobegon be gone! The “below-average effect” and the egocentric nature of comparative ability judgments. *Journal of Personality and Social Psychology*, 77, 221–232.
- Kuiper, N. A., & Rogers, T. B. (1979). Encoding of personal information: Self–other differences. *Journal of Personality and Social Psychology*, 37, 499–514.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, 108, 480–498.
- Kunda, Z. (1999). *Social cognition: Making sense of people*. Cambridge, MA: MIT Press.
- Kunda, Z., & Sanitioso, R. (1989). Motivated changes in the self-concept. *Journal of Experimental Social Psychology*, 25, 272–285.
- Markus, H. (1977). Self-schemas and the processing of information about the self. *Journal of Personality and Social Psychology*, 35, 63–78.
- Otten, W., & Van der Pligt, J. (1996). Context effects in the measurement of comparative optimism in probability judgments. *Journal of Social and Clinical Psychology*, 15, 80–101.
- Price, P., Pentecost, H., & Voth, R. (2002). Perceived event frequency and the optimistic bias: Evidence for a two-process model of personal risk judgments. *Journal of Experimental Social Psychology*, 38, 242–252.
- Robins, R. W., & John, O. P. (1998). The quest for self-insight: Theory and research on the accuracy of self-perception. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology*. San Diego, CA: Academic Press.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Ross, L., & Ward, A. (1996). Naive realism in everyday life: Implications for social conflict and misunderstanding. In E. S. Reed & E. Turiel et al. (Eds.), *Values and knowledge. The Jean Piaget symposium series* (pp. 103–135). Hillsdale, NJ: Erlbaum.
- Ross, M., & Sicoly, F. (1979). Egocentric biases in availability and attribution. *Journal of Personality and Social Psychology*, 37, 322–336.
- Schkade, D. A., & Kahneman, D. (1998). Does living in California make people happy. A focusing illusion in judgments of life satisfaction. *Psychological Science*, 9, 340–346.
- Schwarz, N., Groves, R., & Schuman, H. (1998). Survey methods. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 99–179). New York: Oxford University Press.
- Srull, T. K., & Gaelick, L. (1983). General principles and individual differences in the self as a habitual reference point: An examination of self–other judgments of similarity. *Social Cognition*, 2, 108–121.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193–210.
- Weinstein, N. (1987). Unrealistic optimism about susceptibility to health problems: Conclusions from a community-wide sample. *Journal of Behavioral Medicine*, 10, 481–500.
- Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39, 806–820.
- Weinstein, N. D. (1998). Unpublished bibliography.
- Weinstein, N. D., & Klein, W. M. (1996). Unrealistic optimism: Present and future. *Journal of Social and Clinical Psychology*, 15, 1–8.
- Weinstein, N. D., & Lachendro, E. (1982). Egocentrism as a source of unrealistic optimism. *Personality and Social Psychology Bulletin*, 8, 195–200.
- Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). *A model of dual attitudes*. *Psychological Review*, 107, 101–126.
- Wilson, T. D., Wheatley, T., Meyers, J. M., Gilbert, D. T., & Axsom, D. (2000). Focalism: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 78, 821–836.
- Windshittl, P., Kruger, J., & Simms, E. (2003). The influence of egocentrism and focalism on people's confidence in competitions: When what affects us equally affects me more. *Journal of Personality and Social Psychology*, 85, 389–408.