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Not so above average after all: When people believe they are worse than average and its implications for theories of bias in social comparison ☆

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Abstract

Recent research calls into question the generally accepted conclusion that people believe themselves to be better than average. This paper reviews the new theories that have been proposed to explain the fact that better-than-average effects are isolated to common behaviors and abilities, and that people believe themselves to be below average with respect to rare behaviors and uncommon abilities. These new theories are then used to revisit prior findings of better-than-average effects. When viewed in light of recent work, the evidence suggests that prior findings overstated the degree to which people engage in self-enhancement by believing that they are better than others when in fact they are not. Prior studies have often confounded desirability with commonness and have used subjective measures of comparative judgment that capitalize on people's tendency to conflate relative with absolute self-evaluation.

Keywords: Comparative judgment; Overconfidence; Better-than-average; Social comparison; Positive illusions

There can be little doubt that people use social comparisons with others to make sense of their own outcomes (Blount & Bazerman, 1996; for reviews, see Buunk & Gibbons, in press; Greenberg, Ashton-James, & Ashkanasy, in press this volume). But an important body of research in judgment and decision making suggests that these comparisons are systematically biased. For some time, it has been accepted wisdom that people see themselves in an unrealistically positive light. Dunning, Heath, and Suls (2004) summarize the literature this way: "People, on average, tend to believe themselves to be above average—a view that violates the simple tenets of mathematics." Likewise, Peterson (2000) concluded that "Apparently, in our minds, we are all children of Lake Wobegon, all of whom are above average" (p. 45). The accumulated evidence was strong enough that one of the most popular textbooks in social psychology claimed: "For nearly any subjective and socially desirable dimension … most people see themselves as better than average" (Myers, 1998, p. 440). Numerous influential psychological and economic theories have been built on the foundational assumption of self-enhancement (Baumeister, 1998; Benabou & Tirole, 2002; Brown, 1998; Daniel, Hirshleifer, & Sabrahmanyam, 1998; Dunning, 1993; Epstein, 1990; Greenwald, 1980; Steele, 1988; Taylor & Brown, 1988). These theories are based on evidence that people believe that they are better than others, and they offer to explain it.

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Widespread better-than-average (BTA) effects have important practical implications. The notion that stock market investors believe that they are better than other investors at identifying the next great investment opportunity has been used to explain the high rate of trading in the stock market (Odean, 1998). The claim that managers believe they are better than others has been used to explain the high rate of corporate merger and acquisition (Malmendier & Tate, 2005). The notion that disputants believe that their claims are more justified than are those of others has been used to account for the prevalence of labor strikes and lawsuits going to trial (Babcock & Loewenstein, 1997; Neale & Bazerman, 1985). And the belief that their armies are stronger than those of others has been invoked to explain nations' willingness to make the costly choice to go to war (Johnson, 2004).

However, recent developments have called into question the conclusion that people believe that they are better than others (Blanton, Axsom, McClive, & Price, 2001; Hoelzl & Rustichini, 2005; Kruger, 1999; Moore & Kim, 2003; Windschitl et al., 2003). People report themselves to be worse than others at difficult tasks such as computer programming, coping with the death of a loved one, or attaining high social status (Anderson, Srivastava, Beer, Spataro, & Chatman, 2005; Blanton et al., 2001; Kruger, 1999; Windschitl et al., 2003). They believe that they are less likely than others to experience rare events such as living past age 100 or graduating in the top 1% of the class (Kruger & Burrus, 2004). The consistent and predictable presence of worse-than-average (WTA) effects has important implications for theories seeking to explain biases in social comparison. Can findings of WTA effects be dismissed as small anomalies in a broad literature in which better-than-average (BTA) effects are the norm? Perhaps WTA effects highlight something more profound—a theoretical oversight or an empirical omission in the large body of research that finds BTA effects.

I will explore these concerns by first reviewing the evidence of WTA effects and the theories that can best account for them. These theories delve into the underlying psychological mechanisms involved in comparative judgment and help reconcile the apparent conflicts between WTA and BTA findings. I will then discuss prior evidence of BTA effects and explore the degree to which general theories developed to explain WTA effects can also account for prior findings of BTA effects. This exploration strongly suggests that prior work has substantially overestimated the size and prevalence of BTA effects by focusing on frequent events, simple tasks, and common abilities. Finally, I discuss evidence for motivational effects on comparative judgments and explore the limits of the new theories' ability to explain BTA effects.

Worse-than-average effects

When the task is difficult or success is rare, people believe that they are below average. For example, people report believing they are below average with respect to their unicycle riding and juggling skills (Kruger, 1999). Similarly, University of Iowa students report believing that they stand only a 6% chance of beating fellow University of Iowa students in a trivia contest featuring questions on the history of Mesopotamia (Windschitl et al., 2003). In contrast, a trivia contest featuring questions on TV sitcoms inspired an average estimated probability of winning of 70%. Naturally, these beliefs are erroneous because the tests will be simple or difficult for everyone. On average, the actual probability of winning must be 50%. Moore and Kim (2003, Experiment 1) gave participants $4 and invited them to bet on whether they would beat a randomly selected opponent in a trivia contest. Those who expected the quiz to be simple (sample question: "What is the common name for the star inside our own solar system?") bet significantly more on winning (mean bet = 74% of their $4) than did those who expected the quiz to be difficult (sample question: "What is the name of the closest star outside our solar system?"; mean bet = 40% of their $4).

When negotiators' tasks are made more difficult by the presence of a tight final deadline, people on both sides of the negotiation believe that they will obtain worse outcomes than they would have if given more time (Moore, 2005). Even assuming agreement in purely distributive negotiations, people report believing that a tight deadline will lead them to obtain a smaller portion of the negotiating surplus and will lead their opponents to obtain a larger portion (Moore, 2005). This erroneous belief persists, even in the face of experience, and even in negotiations where deadlines are actually beneficial (Moore, 2004b). As a result of this mistaken belief, people will keep their deadlines secret in order to avoid revealing to the other side what they believe is a weakness (Moore, 2004a). Naturally, this puts negotiators in the worst possible position of having to speed up their own concessions in order to obtain an agreement before the deadline, while their opponents concede more slowly.

Prior evidence seemed to show that people believe positive events are more likely to happen to them than to others, and also that people believe negative events are less likely to happen to them than to others (Klein & Weinstein, 1997; Weinstein, 1980; Weinstein & Lachendro, 1982). However, this early work tended to confound event commonness and valence: positive events (e.g., owning your own home) were also common and negative events (e.g., attempting suicide) were also rare. It turns out that when this confound is controlled, there is a large effect of event commonness: People believe that they are more likely than others to experience common events—such as living past age 70—and less likely than

others to experience rare events—such as living past 100 (Chambers, Windschitl, & Suls, 2003; Kruger & Burrus, 2004). These studies also find an effect of event desirability, but it is small by comparison.

Theories devised to account for BTA beliefs have often emphasized the role of motivations toward self-enhancement. Is it possible that motivational effects could account for WTA effects? Perhaps if participants in Windschitl et al. (2003) third experiment believed that knowing about TV sitcoms was more important than knowing about the history of Mesopotamia, this fact could account for their willingness to report that they stood only a 6% chance of winning a contest on the latter topic. Indeed, Tesser (1988) has argued that people maintain positive self-evaluations by downplaying the self-relevance of unattainable but desirable outcomes.

There are, however, some problems with this motivational explanation for WTA effects. To begin with, task difficulty does not influence whether victory is attainable—50% of contestants win, even in difficult contests. When the weather conditions make the football game more difficult to play, it does not change the fact that one of the two teams will win. Second, while decreased self-relevance for difficult tasks might be able to account for decreased motivation to self-enhance, it would not predict actual self-diminution. In combination with more general motivations toward humility (Arkin & Baumgardner, 1985; Shepperd, Ouellette, & Fernandez, 1996), self-diminution on difficult tasks alone is plausible. However, this motivational explanation for WTA effects is most viable for that subset of studies in which the tasks that produced BTA effects (e.g., driving a car) are different than tasks that produced WTA effects (e.g., juggling, Kruger, 1999, Experiment 1). It is less persuasive when the task remains the same, such as when participants in Kruger and Burrus (2004) first experiment reported that they were more likely than average to live past the age of 70 but less likely than average to live past 100.

Parsimony counsels that we seek an explanation that can account for both BTA and WTA effects. The identification of such a general theory is the goal of this paper. In search of possible explanations for WTA effects, we must turn to a new set of theories.

Explanations that can account for both WTA and BTA effects

Recently, there has been a proliferation of explanations attempting to account for WTA and BTA effects. Chambers and Windschitl (2004), for example, enumerate three general classes of accounts and seven specific non-motivational mechanisms for biases in comparative judgments. I will endeavor to reconcile this growing list of explanations. First, I discuss the three broad classes of explanations and argue that they share fundamental underlying processes. Second, I will explore specific psychological mechanisms that can explain both WTA and BTA effects.

Researchers have attempted to distinguish three broad classes of accounts for both WTA and BTA effects: (1) egocentrism, (2) focalism, and (3) generalized group accounts. None of these three classes of accounts are proper explanations—they are merely general descriptions of the phenomenon. The egocentrism account holds that there is something different in the way people think about themselves as opposed to others, and that this discrepancy can account for biases in comparisons involving the self. People know more about, care more about, and think more about themselves than they do about other individuals (Baumeister, 1998; Brown, 1998; Greenwald, 1980). While it is clearly true that the self holds a unique status in cognition, the reasons for why this unique status results in biased comparisons are not unique. In other words, focusing on the self produces similar biases in comparative judgment as does focusing on another individual. People show the same sorts of "egocentric" biases when the self is not relevant and they are focusing on others (Moore & Kim, 2003; Storms, 1973).

Egocentrism is a special case of focalism: Egocentrism results from focusing on the self. This notion is not a new one (for a review, see Karniol, 2003). Important phenomena that were once assumed to be egocentric effects have, with time, come to be viewed as the products of focusing on the self. Egocentric effects can often be eliminated or reversed by leading people to focus on others. For example, Storms (1973) was able to reverse the standard actor–observer effect (Jones & Nisbett, 1972) by manipulating the perspective from which people viewed an 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). Because the self is chronically focal, it is easier to get people to focus on themselves than on others. However, when people do focus on others, their judgments show the same biases that are so often assumed to be the products of egocentrism.

Generalized group accounts are built on evidence showing that BTA and WTA effects are stronger when people compare themselves to some vague group than when they compare themselves to a specific, known individual (see Hoorens & Buunk, 1993; Klar, Medding, & Sarel, 1996; Klein & Weinstein, 1997; Perloff & Fetzer, 1986; Price, 2001; Windschitl et al., 2003). Some researchers have argued that people may be less able to thoughtfully and accurately evaluate a group than a specific, known referent (Klar, 2002; Klar & Giladi, 1997). Alicke, Klotz, Breitenbecher, Yurak, and Vredenburg (1995) had participants in their experiment rate

themselves relative to others with respect to various common personality traits. The tendency for people to evaluate themselves more positively than others was strongest when people were comparing themselves with the average group member. The tendency was reduced when people were comparing themselves with a specific individual, and was reduced still further when they could see that other individual. This finding suggests that perhaps generalized group effects are the result of the fact that people are not as good at thinking about, giving weight to, and focusing on a large group as on a single individual. Generalized group accounts, then, represent another special category of focusing accounts. Getting people to focus on a group the way they focus on an individual (perhaps by thinking about the average or the modal group member) should reduce or eliminate the difference.

It is also worth remembering that it is, in fact, possible for the majority of individuals to be better than the group average when the distribution is skewed. Consider an extreme example: I ask my class of 100 students to evaluate their probability, relative to the class average, of dying of leukemia. Most of the class is healthy (the population base rate of dying of leukemia is approximately .008% according to the National Cancer Institute, 2005), except one member of the class has leukemia and has been given 6 months to live. Given that the class average is just over 1%, 99 members of the class are below average in their risk of dying from leukemia. For common events, such as living past the age of 70, all it takes is a few people who will probably die young to make everyone else above average. Researchers can avoid this alternative explanation for biases in individual-group comparisons by having people compare themselves with the group's median or mode, rather than its mean. However, researchers rarely do so. This failure suggests an opportunity for a potentially persuasive demonstration of the commonalities between generalized group accounts and focusing accounts: BTA and WTA effects should be stronger when people compare themselves to a group mode than to a single individual, especially an individual they know well. However, this difference should be eliminated by a focusing manipulation that led people to focus as much on the modal group member as they did on a single individual.

The biggest problem with all of these broad accounts (egocentrism, focalism, and generalized group accounts) is that none provides a substantive explanation for the psychological processes involved in BTA or WTA effects. Are the effects due to differential accessibility of target-relevant knowledge, differential knowledge of target and referent, or anchoring on the target? In attempting to understand the causes for WTA effects, it is useful to discuss which specific psychological mechanisms may be at work, so that is where we now turn.

Psychological mechanisms

Identifying the mechanisms that cause BTA and WTA effects depends crucially on being able to measure the processes involved. Thus, it is useful to distinguish between direct and indirect measures of comparative judgment (Helweg-Larsen & Shepperd, 2001; Weinstein & Klein, 1996). Direct comparisons ask participants to indicate how much better one person is than another. For instance, Chambers et al. (2003) asked their participants, "Compared to the average student of the same age and sex, how likely is it that you will win free tickets to a hockey game?" and invited them to respond on an 11-point scale ($-5 =$ *much less than the average student* to $+5 =$ *much more likely than the average student*). Svenson (1981) used a less subjective direct measure when he asked his participants to give themselves a percentile ranking relative to all other participants in the experiment with respect to their driving abilities. A percentile ranking is a less subjective measure in the sense that it has a correct answer: People's self-reported percentile ranks can be compared to their actual percentile ranks, assuming performance data are available.

Indirect comparisons, by contrast, necessarily involve two measures: people evaluate both the target and the referent in absolute terms. For example, Kruger (1999, Experiment 1) asked his participants to assess their own (and others') juggling skills on a 10-point scale ($1 =$ *very unskilled* to $10 =$ *very skilled*). Moore and Kim (2003, Experiment 3) used a less subjective indirect measure when they asked their participants to estimate how many questions they had gotten correct on a 10-item trivia quiz.

Given WTA and BTA effects, there are basically two possible patterns of evidence. The first is that direct and indirect measures of comparative judgment are consistent with one another. Consistency implies that indirect measures account for effects observed in direct measures, and that the explanations for BTA and WTA effects will come from understanding how people make absolute assessments of self and others. While consistency would appear quite sensible, studies have surprisingly found this consistency to be less than perfect; usually, direct measures show stronger WTA and BTA effects than do indirect measures (Chambers & Windschitl, 2004; Otten & van der Pligt, 1996). Inconsistency implies that BTA and WTA biases must arise in the process by which people arrive at direct comparative judgments. I examine each of these possibilities in turn (see Table 1).

Consistency between direct and indirect measures: differential regressiveness

Consistency between direct and indirect measures of BTA and WTA effects necessitates that on difficult tasks people estimate their scores to be lower than those of others; while on simple tasks people estimate their scores to

Table 1
BTA and WTA effects are accompanied by both consistency between direct and indirect comparative measures (differential regressiveness) and by inconsistency between them (differential weighting)

Pattern in results	Causal processes	Moderators
Consistency between direct and indirect comparative judgments (differential regressiveness)	Differential information Differential attention	Information about target and referent (Moore & Small, 2006) Referent vagueness (hypothesized) Referent salience (Sanbonmatsu et al., 1987) Focusing (Moore & Kim, 2003)
Inconsistency between direct and indirect comparative judgments (differential weighting)	Conflation Differential accessibility	Question vagueness (Moore, 2006) Referent vagueness (Kruger et al., 2006) Vagueness of evaluation dimension (Burson & Klayman, 2005) Referent salience (Klar & Giladi, 1997; Windschitl et al., 2003) Focusing (Moore & Kim, 2003)

Next to each is listed the causal processes that can give rise to them and the moderator variables whose manipulation has produced evidence for each causal process.

be higher than those of others. In other words, people's estimates of target and referent are differentially regressive. These patterns are shown in data reported by Moore and Small (2006). In their first experiment, 255 students took one of two 10-item trivia quizzes. Half of them took a very simple quiz, the other half took a very difficult quiz. As expected, this difficulty manipulation had a significant effect on comparative judgments: Those who took the simple quiz estimated that they would rank in the 62nd percentile, relative to others who had taken the same quiz; those who took the difficult quiz estimated that their scores would put them in the 37th percentile, $t(253) = 8.48$, $p < .0001$. Quiz difficulty accounts for 22% of the variance in participants' self-reported percentile rank.

Takers of the simple quiz estimated that they had answered an average of 8.26 correctly, but estimated that others would only get 8.05 correct. Those who had taken the difficult quiz estimated that they had gotten an average of 2.62 right but estimated that others would get more right ($M = 3.54$). Naturally, participants' beliefs about their own and others' performances are predictive of their beliefs about their relative standing. The indirect measure of participants' relative judgments takes participants' estimates of their own scores and subtracts their estimates of others' scores. Regression reveals that this measure accounts for 35% of the variance in self-reported percentile rank.

We can use these data to estimate the proportion of BTA and WTA effects (i.e., the effect of difficulty on comparative judgments) accounted for by differential regression, and how much is left over for other possible explanations, such as differential weighting. In order to do this, we must first compute the joint effect of differential regression and difficulty. Adding the difficulty condition dummy variable to this regression increases the R^2 value to 42%. This implies that quiz difficulty accounts for 7% (42% minus 35%) of the variance in the direct comparative measure (self-reported percentile rank) that is not accounted for by the indirect measure. This 7% represents 32% of the total effect of difficulty (22%). In other words, differential regressiveness of absolute judgments accounts for the remaining 68% of the effect of difficulty on comparative judgment in these data.

Differential information. Why would estimates of others be more regressive than estimates of the self? The most obvious reason is that people have better information about themselves than they do about others (Pronin, Lin, & Ross, 2002; Ross & Sicoly, 1979). One's own actual performance is generally more highly correlated with estimates of one's own performance than with estimates of others' performances (Epley & Dunning, 2006). People do have inside information about themselves useful for estimating past behavior or predicting future behavior. Not all of those who believe that they are better than average are suffering from positive illusions—some of them are, in fact, better than average (Klein & Steers-Wentzell, 2005). As a result, whenever people's own performances are extreme in some way, it is reasonable for them to assume that others' will be less extreme (Miller & McFarland, 1987). If, for instance, I know that I stand a low probability of committing suicide, and given my relative ignorance of others' vulnerability to suicide, it might make sense to suppose that my risk is below average (Weinstein & Lachendro, 1982), and even below the median. On the other hand, if I know that I usually strive to treat others fairly, but I cannot be as sure of others' motives, it makes sense to infer that I am probably above average in my benevolence (Messick, Bloom, Boldizar, & Samuelson, 1985). Or if I happen to know that my own legal case is strong, then in the absence of good information about the strength of the other side's case, it might make sense to believe that I am likely to win in court (c.f. Brenner, Koehler, & Tversky, 1996). The natural consequence of the fact that people have more information about themselves than others is that their self-assessments will be more extreme than will their assessments of others (Fiedler, 1996, 2000).

This theory highlights the important role of information acquisition over time in moderating BTA and

WTA effects. When people lack information about both themselves and others, there are no differences in information and therefore no differential regression. When people gain some information about themselves, others, or the task at hand, they can use that information to update their beliefs or expectations regarding performance. Since it is most common for people to have better information about themselves than about others, we ought to expect BTA effects when average performance is better than baseline expectations and WTA effects when performance is worse than expectations. And we ought to expect a reversal of these effects when people have better information about others than about themselves. Yet while this theory would predict important changes in beliefs for a given task, it would not predict any more general learning across tasks that are not related. In other words, since the theory is based on prescriptive logic, it would predict that BTA or WTA effects will be robust to repetition and experience, given that rational people ought to display them.

Differential attention. Note, however, regressive estimates of others could arise through less "rational" processes. People may simplify or caricature their estimations of others merely because they fail to think deeply about them (Weizsacker, 2002), just as when people are asked to estimate the probabilities of a set of outcomes that they do not know much about and they report that all outcomes are equally likely (Bruine de Bruin, Fischhoff, Millstein, & Halpern-Felsher, 2000; Fox & Rottenstreich, 2003). This effect has been persuasively demonstrated by Sanbonmatsu, Shavitt, Sherman, and Roskos-Ewoldsen (1987). They found that, people make more extreme—and less regressive—estimates of others when they are salient (see also Sanbonmatsu, Shavitt, & Gibson, 1994).

Naturally, the availability and attention given to self-relevant information need not always put the self in a positive light. If I know that my own legal case is particularly weak, then I am likely to be pessimistic about winning in court. If I know that my chance of graduating in the top 1% of my class is small, then I am likely to regard my chances as below average (Kruger & Burrus, 2004). The implication of this logic is that it is selective information about the target of judgment that leads to biases in comparative judgment. The implications of this perspective have been supported by evidence showing that giving people better information about their own performances exacerbates both BTA and WTA effects—they come to believe more strongly that they are above average when they have done well and also more strongly that they are below average when they have done poorly (Moore & Small, 2006; Sutton, 2002). On the other hand, giving people better information about others' performances reduces both BTA and WTA effects—they realize that their own performances are not so exceptional after all (Moore & Small, 2006).

Nevertheless, there are research findings of BTA and WTA effects for which differential regressiveness cannot account for the results (Giladi & Klar, 2002; Klar & Giladi, 1997; Moore, 2005). For example, in their fourth experiment, Moore and Kim (2003) induced some of their participants to focus on their opponents. The result was that their estimates of their own performances were more regressive than were their estimates of their opponents. This then reversed the standard effect of task difficulty: Participants who focused on the opponent were more confident of beating that opponent on a difficult task than on a simple one. Indeed, in Moore and Kim's fourth experiment, those who were focusing on the opponent clearly had less information about the target than about the referent. Among those focusing on themselves, differential regressiveness accounts for 70% of BTA and WTA effects. However, among those focusing on the opponent, differential regressiveness accounts for virtually none (1%) of the effects in comparative judgment. In order to explain the remaining effect of task difficulty on comparative judgments, we must consider explanations that allow for inconsistency between direct and indirect measures of comparative judgment.

Inconsistency between direct and indirect measures: differential weighting

Direct comparisons routinely show stronger BTA and WTA effects than do indirect comparisons (Chambers & Windschitl, 2004). For example, on an easy task, people might agree that the task will be easy for everyone, but continue to predict that they will perform above average. A number of explanations have been offered to account for this discrepancy, all of which suggest that the referent is underweighted relative to the target (Camerer & Lovallo, 1999; Giladi & Klar, 2002; Klar & Giladi, 1999). Such differential weighting is the most viable explanation for the discrepancy between direct and indirect measures of comparative judgment. The most popular statistical proof of this differential weighting has been to regress comparative judgments on absolute evaluations of target and referent, and to show that the target is weighted more heavily than is the referent (for examples of its use, see Chambers et al., 2003; Giladi & Klar, 2002; Klar & Giladi, 1997; Kruger, 1999; Kruger & Burrus, 2004; Windschitl et al., 2003).

However, this type of path analytic evidence is problematic. For one thing, there is often more variance in estimations of the target. Usually, the target of judgment is the self. The referent to which the self is being compared is the group. It simply has to be the case that there is more variance in the individual members of the group than there is in the group's average. Indeed, if everyone correctly estimated the group's average, there would be no variance in it and it would appear to be weighted

zero, even if it were sensibly being incorporated into comparative judgments.

It is important to note that path analyses do not explain *why* the target would be weighted more highly than the referent, nor do they specify a psychological process that could be causing the differential weighting. There remain multiple possible causes. Yet differential weighting must be occurring if direct and indirect measures are inconsistent, as they are in so many studies (Chambers & Windschitl, 2004). Even if we ignore the path analytic evidence, differential regressiveness explanations cannot account for the fact that BTA and WTA effects are routinely stronger than the comparative judgments implicit in people's absolute evaluations of target and referent. Three distinct explanations have been proposed to account for this discrepancy.

Conflation. The first explanation for differential weighting has to do with the clarity of the questions used to elicit comparative judgments. People routinely mix up relative and absolute evaluation (Baron, 1997), and the use of subjective rating scales dramatically increases this risk (Moore, 2006). For instance, Giladi and Klar (2002) asked participants in their second study to rate their liking of songs. Participants reported their liking for individual songs on an 11-point scale that ran from 0 (*extremely dislike it*) to 10 (*extremely like it*). They rated each song relative to the group of songs on an 11-point scale that ran from 0 (*dislike it much more than the other hits in the group*) to 10 (*like it much more than the other hits in the group*). To the extent that participants consider relative standing in their absolute ratings (or vice versa), it should be no surprise that absolute and relative ratings of the target are highly correlated: They are measuring the same thing. In Moore and Small (2006) second experiment, for example, there was a correlation of .78 between participants' estimates of their absolute and relative performances using verbally anchored scales. By contrast, this correlation was smaller ($r = .51$) between the more objective measures (i.e., estimates of the number of questions answered correctly and estimates of the difference in scores between themselves and the average person).

Note that this is an important issue for broader findings of better-than-average effects. Many demonstrations of better-than-average effects have assessed beliefs about relative standing using subjective verbally-anchored scales (Larwood, 1978; Larwood & Whittaker, 1977; Zenger, 1992). If participants conflate relative with absolute assessment, all it takes for them to rate themselves as above average is to believe that they are good (Burson & Klayman, 2005; Klar & Giladi, 1999). And this will occur *not* because people actually believe that they are better than average—they would not put money on being better than others—but merely because the way they were asked the question was not sufficiently clear. In other words, subjective verbally-anchored response scales promote conflation (Moore, 2006).

These same measurement issues may help account for notable disagreements regarding the relative importance of differential regressiveness and differential weighting in comparative judgments. Some evidence suggests quite strongly that direct comparisons are mediated by indirect comparisons. In addition to Moore and Small's estimate that 68% of the effect of task difficulty on direct comparative judgments can be accounted for by absolute evaluations, another 68% estimate comes from Moore and Kim (2003, Experiment 3). These results are, however, at odds with Chambers and Windschitl's surprising claim that, "empirical findings do not suggest that [differential regression] plays a major role" in Chambers and Windschitl (2004, p. 828). Chambers and Windschitl base this claim on findings such as those from Windschitl et al. (2003) fourth experiment. Participants were asked to estimate the probability that they would beat an opponent in trivia quizzes on each of 30 topics. Participants also estimated, on 7-point scales, how knowledgeable both they and their opponent were on each topic. In these data, participants' indirect comparative judgments only account for 24% of the variation in their predicted probability of winning due to test difficulty.

One possible explanation for the discrepancy has to do with the measures involved. The use of subjective verbally-anchored scales by Windschitl et al. ought to raise some concerns. Such scales, after all, are open to subjective construal by participants (Biernat, 2003; Biernat, Manis, & Kobrynowicz, 1997; Heine, Lehman, Peng, & Greenholtz, 2002; Schwarz, 1999; Schwarz, Groves, & Schuman, 1998; Schwarz & Hippler, 1995). As a result, people may use the scales differently when they are evaluating themselves and when they are evaluating others. For example, it is likely that self is used as a standard and helps define the ends of the scale when evaluating others. When evaluating the self, it possible that other people are used to define the scale, but the individual may not necessarily have in mind the same referents that the researcher has in mind (Giladi & Klar, 2002). Moreover, such subjective scales are simply noisier measures due to participants' idiosyncratic subjective interpretations. For example, subjective measures of performance share less variance with true performance than do objective measures (Moore, 2006; Moore & Small, 2006).

Few studies have used both objective and subjective measures of perceptions of absolute performance. However, Moore and Small's first experiment does include such data. In addition to participants estimating scores for self and other, they also reported performance using standard subjective verbally anchored 7-point rating scales. Using objective measures produced the result that the indirect measure of comparative judgment accounts for 68% of the effect of difficulty. The same analysis,

using subjective measures, found that this indirect judgment only accounted for 38% of the effect of difficulty. Clearly, differential regressiveness in estimates of performance is strongly associated with direct comparative judgments, but this relationship is obscured by the use of noisy subjective measures (see Burson & Klayman, 2005).

Differential accessibility. The second explanation for differential weighting is that self-knowledge is more mentally accessible than is knowledge of others (Markus, 1977). Therefore, the knowledge that they are, say, prone to driving too fast, leads them to the conclusion that they are above average in the probability of getting a speeding ticket. They fail to consider the speed at which others drive, because they know more about their own driving habits than about others'. Consistent with this explanation, manipulations that make referent others more salient or accessible also reduce BTA and WTA effects (Alicke et al., 1995; Eiser, Pahl, & Prins, 2001; Perloff & Fetzer, 1986; Weinstein & Lachendro, 1982; Windschitl et al., 2003). It is striking that this explanation for differential weighting sounds so much like the most viable explanation for differential regressiveness in absolute estimates: better information about self than about others. It is, of course, possible that differential accessibility leads people to both make more regressive estimates of others and also to underweight those estimates when making comparative judgments (Kruger, Windschitl, Burrus, Fessel, & Chambers, 2006). However, studies that have manipulated accessibility of the judgment referent have not used designs that allow for independent tests of differential regressiveness and differential weighting. This is an opportunity for future research.

One of the reasons why information about the target might be more accessible or salient than information about the referent is that the target is associated with unique and individuating information (Epley & Dunning, 2000). People know their own personal risk factors whereas when they consider the risk factors of the average person, they must instead attend to population base rates (Klar et al., 1996). Such population base rates, while useful, are duller and more pallid than individuating information about the self, and are therefore routinely underweighted (Kahneman & Lovallo, 1993). Note that this differential accessibility explanation (which predicts that estimates of others will be more accurate than estimates of self) is inconsistent with the differential regression explanation (which predicts that estimates of self will be more accurate than estimates of others). Resolution of this inconsistency is a potential avenue for future research. One way to approach the problem might be a manipulation of the willingness to rely on case-based versus base-rate judgment by varying (1) whether performance is random or a product of skill and (2) the quality of information people have at their disposal for predicting the performance of the self versus others.

Anchoring. The anchoring argument claims that people anchor on the absolute performance of the target and then adjust insufficiently from that anchor when making a comparative judgment (Kruger, 1999). However, it is difficult for the standard anchoring process to account for WTA and BTA results. In the standard view, anchoring describes the tendency for a judgment's starting point to exert undue influence on final estimates of that same quantity. For example, people estimate that there are a smaller number of African nations in the U.N. if they begin by considering whether the right answer is 10 than 65 (Tversky & Kahneman, 1974). But comparative judgments are not the same as absolute judgments. How does the knowledge that I say "please" or "thank you" 50 times each day translate into the belief that I am more polite than average? It is entirely unclear which number is anchoring which specific judgment. The numerical priming version of the anchoring explanation, then, has trouble accounting for BTA and WTA effects.

There is, however, a more recent explanation of anchoring effects that presents a somewhat less implausible alternative. The selective accessibility account holds that anchor-consistent information is rendered selectively accessible in memory, and thus wields an undue influence on judgment (Mussweiler & Strack, 2000; Strack & Mussweiler, 1997). This explanation would hold that, when someone is asked whether she is a better driver than others, the fact that she is a fairly capable driver renders selectively accessible in her mind those facts which would suggest that she is a better driver than others. This version of the anchoring explanation is, for our purposes, much the same as the differential accessibility explanation described above.

Up until now, this paper has been dedicated to a focused review of recent evidence and theory of WTA effects. Why should we care about the details of the psychological processes at work in producing WTA effects? Because in addition to whatever inherent scientific satisfaction it gives us to understand why these effects occur, WTA effects can help us understand prior BTA findings. As we will see, these new theories suggest prior research may have overstated the size and ubiquity of BTA effects. From this point, the paper turns its attention to reconsidering BTA evidence in light of the theoretical progress reviewed thus far.

Better-than-average effects

In this section of the paper, I review some of the most frequently cited evidence in support of a general tendency for people to believe that they are better than

others with respect to desirable traits, abilities, and behaviors. For each piece of evidence I discuss how the new WTA explanations presented above would account for the BTA evidence. In each instance, I also propose a novel prediction that the WTA explanations would make, hypothesizing WTA findings that are inconsistent with simple theories of self-enhancement used to explain BTA findings. Some of the classic papers most often cited to support the existence of a systematic better-than-average effect are easily explained by the WTA explanations reviewed above.

Perhaps the most frequently cited instance of BTA effects is Svenson (1981) finding that people rate themselves as above-average drivers. Driving is something that most adults do routinely, and at which they are likely to feel competent, despite its complexity. Differential regression explanations would point out that people have better information about their own driving abilities and performance than they do about others'. As such, it might make sense to infer that others are worse drivers. WTA theories would predict that drivers who felt less sure of themselves, such as those first learning to drive, would report themselves to be below average in their driving abilities relative to other new drivers (for some evidence consistent with this prediction, see Rutter, Quine, & Albery, 1998).

Another frequently cited result is Larwood and Whittaker (1977) finding that experienced business managers predicted that they would be more successful than others would in the coming year (for other studies using similar methods, see McCall & Nattrass, 2001; Middleton, Harris, & Surman, 1996; Rutter et al., 1998; Zenger, 1992). First, it is worth noting that the researchers did not follow up to measure actual performance and that it is possible that the managers who chose to participate in their study were actually the ones who were more successful. But assuming away this unlikely possibility, we still ought to be concerned because the researchers employed a subjective verbally-anchored scale. It is possible for everyone to experience success, especially in growing industries, and, as we have seen, being successful may be enough to lead people to infer that they are more successful than average. It is likely that, if asked to rate the chances that their firm would be bought in the coming year by their most successful rival and that the transaction would leave them fabulously wealthy, most business people would believe that they were less likely than others to experience this positive but unlikely outcome.

One piece of evidence often cited in support of BTA effects is the fact that people generally rate positive personality attributes to be more descriptive of themselves than of others (Alicke, 1985; Brown, 1986). Of course, these ratings are made on subjective scales so one has to worry that people are using the scale differently for self and for others. But even assuming that they use the scale consistently, differential regressiveness explanations suggest it might be quite sensible to surmise that one is above average in friendliness and below average in dishonesty, given that (1) people know they are routinely friendly but rarely dishonest and (2) that they have better information about their own behaviors than they do about others'. The consequence is that people ought to be more sure for themselves than for others that friendliness is displayed often and dishonesty is rare. The traits Alicke (1985) studied are clearly confounded with commonness: It is more common for people to try to be friendly, cooperative, and dependable than dishonest, phony, and rude.

A number of findings have suggested that BTA effects strongest for controllable outcomes (Harris, 1996; Higgins, St Amand, & Poole, 1997; Klein & Kunda, 1994; Weinstein, 1980, 1982). BTA effects often disappear entirely for events over which people have no control. For example, Camerer and Lovallo (1999) gave their participants the choice of whether to enter contests for cash prizes. When the outcomes of the contests were to be determined by performance on a trivia quiz, too many people entered and the average entrant lost money (due to the fact that entrants who placed below a certain rank lost money). When the prize winners were to be chosen at random among entrants, entry rates were lower. Camerer and Lovallo inferred, as have other researchers, that people believe that their skills are above average, but that they are less likely to believe that their luck is better than average. However, this inference is unwarranted, because skill-based contests do not always elicit overconfidence. Moore and Cain (in press) replicated Camerer and Lovallo's result when the trivia quiz was a simple one. However, when the trivia quiz was difficult, too few people chose to enter and the average entrant made a tidy profit. Entry rates in the random-prize condition were between the simple and difficult conditions.

The implication is that prior studies have tended to confound controllability with ease. On controllable difficult tasks, people believe that they are worse than others. It ought to follow that people would believe themselves above-average on likely chance outcomes but below average on rare chance outcomes. While there is some evidence consistent with this supposition (Huberman & Rubinstein, 2002), these effects have proven difficult to replicate. Perhaps this is because chance tasks generally make individuating differences irrelevant, thereby minimizing the impact of differential information, differential information, and differential attention.

Perhaps the largest accumulated body of evidence showing BTA effects comes from the comparative optimism literature that examines people's beliefs about their relative likelihood of experiencing future events (Weinstein, 1980, 1982, 1987). Researchers have claimed that people believe themselves to be less likely than others to experience undesirable events (such as committing

suicide or getting addicted to drugs) and more likely than others to experience desirable events (such as owning a home or having a gifted child). However, Harris (1996) notes that "While many events have been shown to produce optimistic bias, not all of them do, and the magnitude of the bias varies greatly from event to event (Weinstein, 1980, 1987, 1989)" (p. 11). Because studies of comparative optimism have routinely confounded frequency and desirability, their findings may simply be attributable to the fact that people think they are less likely than others to experience rare events, and evidence supports this supposition (Chambers et al., 2003; Kruger & Burrus, 2004). Furthermore, we ought to be concerned about the potential for ceiling and floor effects to generate skewed distributions. In skewed distributions, more than half the people can be above average. Comparative optimism studies usually ask people to compare themselves with the average, rather than the median, the mode, or a representative individual. And if people make more errors estimating the frequency with which others will experience some rare event, they are likely to overestimate it and wind up believing that they are less likely than others to experience it.

A number of findings all demonstrate that bias in social comparison is more likely when the attributes or skills being evaluated are ambiguous. For example, people are more likely to rate themselves above average on vague and subjective attributes like idealism than on more specific attributes like neatness (Dunning, 1999; Dunning, Meyerowitz, & Holzberg, 1989). Attributes that are specific, public, and objectively measurable tend to show weaker or non-existent BTA effects, whereas vague, private, and subjective attributes tend to show the strongest BTA effects (Allison, Messick, & Goethals, 1989; Van Lange, 1991). These findings are consistent with the differential regression explanation for BTA and WTA effects: The more vague one's knowledge of the other, the more regressive one's estimates of them (Miller & McFarland, 1987). On attributes that I know I possess in spades, but for which I have less information about others, it may be sensible to infer that I am above average. The novel prediction would be that for rare attributes, people would rate themselves as more below average when those attributes are vague, private, and subjective. For instance, people are more likely to believe that they are below average with respect to their ability to exercise conscious control over their heart rate and digestive processes (a rare, private, and subjective ability) than with respect to their ability to run a mile in under 6 min (a rare, publicly observable, and objective ability).

Some evidence shows that people overestimate others' undesirable behaviors, and so believe themselves to be below average in their own display of such behaviors (Goethals, Messick, & Allison, 1991; see also Krueger, 1998; Van Lange & Sedikides, 1998). This evidence is easily explainable by the differential regression explanation. Generally, people probably have better information about the likelihood that they would engage in some desirable behavior (e.g., that they would clean up the table after eating at McDonald's) than they do about others. Given that behavior desirability is often confounded with commonness, we cannot tell whether people report that they cut off other cars while driving more rarely than others because they are engaging in self-enhancement or because they make more errors estimating others and so overestimate this rare behavior. Manipulating desirability and commonness independently would allow for a test of this question. If the effect is due to event commonness, then people should believe that they are above-average in the frequency with which they engage in common undesirable behaviors (such as failing to completely stifle flatulence) and also report that they are below average in the frequency with which they engage in desirable rare behaviors (such as saving others' lives).

Finally, we should consider another critique of the generality of BTA effects. The cultural critique of the self-enhancement literature has pointed out that Asian cultures do not display BTA beliefs the way Americans do (Heine, Lehman, Markus, & Kitayama, 1999; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). In response, Sedikides, Gaertner, and Toguchi (2003) have shown that Japanese people, like Americans, rate themselves above average on those traits and behaviors that are more valued and hence more common in their culture. It is just that what they value is different. The obvious alternative explanation for the findings of Sedikides and colleagues is that BTA effects they find are driven by event commonness rather than desirability. Americans value self-reliance, and so exhibit it more; Japanese value group loyalty, and, therefore, display it more often. This alternative explanation is especially viable, given the prevalent use of subjective verbally anchored scales for obtaining comparative judgments (Heine et al., 2002; Sedikides et al., 2003), making it easy for respondents to conflate relative with absolute evaluation. The novel prediction in this domain would be that people in both cultures believe they are below average in their likelihood of displaying rare but desirable behaviors: Even Japanese people believe that they are less likely than their peers to be willing to sacrifice their lives to preserve the honor of their families.

In this section of the paper, I have reconsidered some of the most frequently cited evidence supporting the conclusion that people generally believe themselves to be better than others, and have shown that newer theories suggest that this conclusion is unwarranted. However, the accumulated body of evidence on BTA effects is larger than the set of studies I examined above. Are there findings within this literature that cannot be accounted for by the new theories I review? Indeed there are—and

these studies implicate motivational factors driving people to *want* to believe that they are better than others.

WTA theories cannot explain motivational effects

Many studies have found BTA effects and inferred motivation as a cause. While we have seen that such inferences are frequently unwarranted, there is stronger evidence implicating motivational influences on social comparisons. Some of the more persuasive evidence of motivation comes from studies that have explicitly manipulated it. A number of studies have shown that BTA effects increase when people feel threatened or when they are otherwise motivated to see themselves as better than others. These results are inconsistent with WTA effects and WTA theories cannot account for them.

When people's self-regard is threatened, such as when they believe they have performed poorly, this threat can often produce a motivation toward self-enhancement by seeing themselves as better than others (Wills, 1981, 1987; Wood, 1989). For example, when they experienced a visible personal failure, despite the fact that their affiliation with it should drag down the implicit quality of their home university, people instead increased their estimates of the quality of the institution, and they furthermore devalued the quality of rival institutions (Cialdini & Richardson, 1980; see also Crocker, Thompson, McGraw, & Ingerman, 1987). The motivation to bolster themselves after having experienced a personal failure or a threat often leads people to selectively compare themselves with those who are worse off than they are (Friend & Gilbert, 1973; Hakmiller, 1966; Levine & Green, 1984; Wilson & Benner, 1971; Wood, Taylor, & Lichtman, 1985). Indeed, some evidence suggests that downward comparisons can actually lead people to feel better by reducing stress or increasing self-esteem (Aspinwall & Taylor, 1993, 1997; Gibbons, 1986; Hakmiller, 1966).

Epley and Dunning (2000) have presented important evidence implicating motivation in people's estimates of their own likelihood of engaging in desirable behaviors, such as donating blood or contributing to charity. Epley and Dunning found that people tended to overestimate the probability that they would do these virtuous things, but were generally more accurate at estimating the base rate frequency with which others would, on average, engage in such behaviors. This evidence contradicts the differential regression explanation, which would predict the strongest BTA effects when people underestimate others more so than themselves on common behaviors. Clearly, motivation can lead to self-enhancement, and this is especially likely to be true for behaviors or traits that the individual regards as important (Bass & Yammarino, 1991; MacDonald & Ross, 1999; Risucci, Tortolani, & Ward, 1989; Sanbonmatsu et al., 1987). It is, however, worth noting that self-knowledge remains useful: Although self-knowledge can increase bias (as measured by the difference between predictions and reality), it also increases the correlation between predictions and reality (Epley & Dunning, 2006).

WTA theories also cannot account for the fact that BTA effects are stronger when people are implementing a decision they have already made than when they have not yet made the decision (Taylor & Gollwitzer, 1995). Here again, motivational forces are probably at work. Given the choice to pursue a goal, it is likely to be adaptive to marshal one's resources in pursuit of the goal. Especially in competitive situations, fooling yourself into believing that you are better than the competition is likely to enhance your ability to engage in bluffs or intimidation (Schelling, 1960; Trivers, 1991; Wrangham, 1999). While such a strategy may be individually rational, it also produces collective dysfunction: Given that all competitors have the same motivations to bluff by exaggerating their own strength, and that bluffers are most convincing when they believe it themselves, escalating conflicts are likely to ensue, resulting in too many wars, law suits, and strikes (Babcock & Loewenstein, 1997; Johnson, 2004; Kennan & Wilson, 1990).

In sum, WTA explanations based on event commonness have trouble accounting for evidence showing that motivation increases BTA effects. Now the question: Which is stronger, motivation or event commonness? There are two published studies that have explicitly compared the effects of commonness and motivation (Chambers et al., 2003; Kruger & Burrus, 2004). Both studies examined optimism about future events and found that people believed that they were above average in their probability of experiencing common events (such as getting a speeding ticket) and below average in their probability of experiencing rare events (such as getting a ticket for driving too slowly). However, both studies found significant effects for desirability after controlling for event commonness: People predicted that they would be more likely to experience positive than negative events. The key question for our purposes here is the comparison in the relative sizes of these effects. Kruger and Burrus (2004) measured the effect size for event commonness ($\eta^2 = .68$) as roughly five times the size for event desirability ($\eta^2 = .14$). So while motivational effects on comparative judgments are real, they are modest in size when compared with the effect of event commonness.

However, more evidence comparing motivation and commonness is sorely needed. Outcome desirability is only one of the many ways in which motivation has been manipulated, and other forms of motivational influence on comparative judgments deserve to be compared to the effect of commonness. Prior work has shown that people are more likely to believe themselves to be better than others in domains that are particularly self-relevant (Tesser, 1988; Tesser & Campbell, 1980). How does the effect of self-relevance measure up against with the effect

of event commonness in influencing comparative judgments? Studies demonstrating WTA effects have generally used tasks (e.g., trivia tests) that are not particularly central to participants' identities. If participants were told that their performance on some task was predictive of intelligence, longevity, or career success, would they still believe that they were below average even if the task was very difficult? WTA theories predict that they would.

Future research

This review implies three specific methodological improvements for future research. First, researchers should avoid claiming that they have demonstrated a bias when they find that a majority of people believe they are above (or below) average. Skewed distributions make it entirely possible for the majority to be above average. Unless researchers have measured the actual distribution of outcomes (or at least participants' beliefs about the distribution of outcomes) then they ought to avoid such claims. Researchers can address this issue by having participants compare themselves with the median rather than the mean. While it is possible for the majority to be above average, it is impossible for the majority to be above the median. Another alternative that eliminates the need to explain how to calculate the median is to ask participants to estimate the percentage of others that they are better than. For instance, "What percentage of others has had fewer sexual partners than you?" It is impossible for the majority of people to be above the 50th percentile.

Second, researchers should use objective measures of comparative judgment. In this review, I have been critical of subjective verbally anchored scales, as they are noisier and more prone to bias than are more objective measures. Yet just because subjective scales are noisy and biased does not mean they are worthless. One may legitimately ask which measure is more meaningful—that which corresponds most closely to objective reality, or that which correlates most closely to an individual's psychological reality. If a person feels confident that he or she is above average, yet is fairly well calibrated when estimating his or her percentile rank, which measure is the "true" measure? The answer to this question must be that there is no "true" measure of a person's belief about relative standing. A more useful question is to ask which measures predict meaningful outcomes, such as willingness to enter competitions, take personal risks, or bet on performance. By this standard, too, the evidence suggests that objective measures are superior to subjective ones (Moore, 2006).

Third, researchers should seek to study behaviors, abilities, and events that are objectively measurable. It has been common for researchers studying better-than-average effects to rely exclusively on people's self-reported beliefs regarding comparative judgments relative to some large peer group, such as other people their age or other students at their university. Without actual outcome data, however, researchers cannot rule out the possibility that the participants in their study are, in fact, better than their peers. After all, they are a select group. If nothing else, they are more likely to actually show up to participate in experiments than are their peers. The obvious solution is to have participants compare themselves with other participants in the study, rather than the broader peer group, and to have them estimate percentile rank rather than comparison to the average. Furthermore, researchers can learn far more and make far stronger conclusions when they can actually obtain outcome data because it allows them to assess the degree to which people's performances are actually better than those of others. Objective measurement of outcomes allows researchers to say more about the causes for beliefs about comparative performance—for instance, whether BTA beliefs arise from overestimating self or underestimating others.

One issue that deserves future empirical attention is the role of cognitive effort in understanding others. Information about the self is chronically more available, and it takes cognitive resources and effort to understand the perspective of others (Gilbert, Pelham, & Krull, 1988). There is one published study that has found BTA and WTA effects to be stronger among participants under cognitive load (Kruger, 1999). It is possible that the reason for this is that cognitive load reduces the mental accessibility of information about others. However, no one has replicated the moderating effect of cognitive load that Kruger (1999) demonstrated, and these questions deserve more attention.

One intriguing issue that deserves to be tested is the possibility that the direct and indirect comparative judgments are (to some extent) unrelated. It is possible that comparative judgments are not always preceded by absolute evaluations, and that people can hold beliefs about their relative standing without having a clear sense of the absolute evaluations underlying it. While this hypothesis raises questions about where comparative judgments could originate if not from absolute evaluations, it deserves further study because it can account for two troublesome empirical results. The first is that manipulating people's beliefs about how frequently other people do something affects their beliefs about how often they do it, implying that people adjust their absolute evaluations so as to be consistent with prior beliefs about relative standing (Klein & Kunda, 1993; Rothman, Klein, & Weinstein, 1996). The second troublesome empirical result is that absolute evaluations are distressingly poor predictors of relative judgments: Unambiguous, objective measures of absolute assessments routinely account for less than 60% of the

variance in direct measures of comparative judgment (Moore & Cain, in press; Moore & Small, 2006; see also Sutton, 2002). Krueger (in press) points out that if comparative judgments are always based on absolute judgments, then comparisons ought to be made with greater speed and efficiency after absolute judgments have been made. If, however, comparative judgments exist independent of underlying absolute assessments, then having considered those absolute assessments may not speed the formation of comparative judgments. This issue presents a clear opportunity for future research.

There are plentiful opportunities to extend the basic theoretical progress I review to phenomena outside the experimental laboratory. One interesting question is whether groups and organizations will fall victim to the same biases. For instance, will there be more firms founded in "easy" industries, resulting in heavier competition and higher rates of failure? Evidence does suggest that industries with which most people are familiar, such as restaurants, bars, and clothing retail, see persistent high rates of founding and failure (U.S. Small Business Administration, 2003). It is also the case that the presence of numerous examples of successful incumbents tends to increase the rate at which new firms are founded, despite the fact that these inspiring examples of success also represent potent competitors (Carroll & Hannan, 1989; Sorensen & Sorenson, 2003). When explaining their entry decisions, entrepreneurs tend to talk more about their own strengths and weaknesses than those of the competition (Moore, Oesch, & Zietsma, in press).

If decisions to found new firms, go to war, or bet on new products are made by groups rather than individuals, might there be grounds to hope that the biases discussed in this paper would be reduced? The salient presence of competitors is likely to increase the accuracy with which they are perceived (Alicke et al., 1995; Windschitl et al., 2003). If groups do a better job at collecting information about competitors' capabilities, then we ought to expect groups to make better estimates of their own relative strengths. However, groups are not necessarily less biased than individuals. Group discussion is often dominated by the information that the group members have in common (Stasser & Titus, 1985, 1987) and, as a result, group decisions are often more biased than are those of individuals (Buehler, Messervey, & Griffin, 2005; Moscovici & Zavalloni, 1969).

The notion that easy tasks—on which people think they are better than others—will attract more entrants raises an interesting issue. If people self-select into domains where they believe themselves to be better than others then for most of the tasks in which people choose to engage, BTA effects will dominate.[1] On the other hand, people's choices regarding the tasks they must accomplish each day are often constrained, leaving them unable to engage in only those tasks on which they believe themselves to be superior to others. Nevertheless, recent research may be overemphasizing the frequency of WTA effects because researchers are selecting tasks that are not representative. This raises important questions about the relative frequency of easy and difficult tasks in everyday life—questions that will have to be explored in future research.

[1] Thanks to Chip Heath for suggesting this idea.

Conclusion

What is to become of the important theories that were based on BTA evidence? The evidence reviewed here suggests that we ought to view them with more skepticism. The assumptions and empirical findings upon which these theories have been built have been called into question. It is clearly not the case that people always view themselves as better than others. People believe that they are less likely than average to exhibit rare abilities and behaviors and more likely than average to exhibit common abilities and behaviors. Previous studies have exaggerated the generality of BTA effects because they have focused on common abilities and behaviors that also happened to be desirable.

Chambers and Windschitl (2004, p. 834) point out the parallels between BTA effects and the "risky shift" phenomenon. There once was a time when group discussion was believed to produce a risky shift in which group members emerged from discussion with riskier preferences than when they went in (Stoner, 1961). However, later research revealed that under certain conditions, group interaction could produce a cautious shift. The more general phenomenon is now known as group polarization (Moscovici & Zavalloni, 1969). Similarly, recent research demonstrating WTA effects calls into question the generality of the conclusions of a great deal of research on above-average and comparative optimism effects. The unidirectional measures, manipulations, and theories employed in research on BTA effects deserve to be re-examined using the new insights arising from more recent work.

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