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I am a better driver than you think: examining self-enhancement for driving ability

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Abstract

We examined whether people recognized that others might disagree with their high self-assessments of driving ability, and, if so, why. Participants in four experiments expressed a belief that others would assess them as worse drivers than they assessed themselves. This difference appears to be caused by participants' use of their own, idiosyncratic definition of driving ability. In Experiments 2 and 3, participants reported that others would supply similar assessments of their ability when the skill was less ambiguous. Results of Experiment 4 indicate that participants recognize that there may be more than one way to view driving performance. Participants appear aware that others likely disagree with their self-assessment of driving ability due to differences in how others define driving ability.

People tend to assess themselves as above average on a number of skills (Kruger & Dunning, 1999) and personality traits (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; see also Chambers & Windschitl, 2004; Dunning, Heath, & Suls, 2004; Sedikides & Gregg, 2008; Taylor & Brown, 1988, for reviews).[1] Intuitively, it seems unlikely that a majority of people can be above average, suggesting that people have an upwardly biased view of their abilities (e.g., Taylor & Brown, 1988).

Robust "better-than-average" effects have been found in the domain of driving (Lajunen & Summala, 1995; Svenson, 1981; Waylen, Horswill, Alexander, & McKenna, 2004; Williams, 2003). For example, one study found that 673 out of 909 motorists believed that they were better than the average driver (Williams, 2003). In the studies reported here, we investigated people's meta-perceptions and meta-cognitions involving their high self-assessments of driving ability: Are people aware that others would likely downgrade their high self-assessments? And if they are aware that others would see them as worse performers than they see themselves, what are people's beliefs about why others disagree?

The present research is centered on the domain of driving because inflated self-perceptions of performance may contribute to excessive risk taking behind the wheel (Svenson, 1981; Williams, 2003). There is no doubt that risky driving contributes to the over 5.5 million accidents in the United States per year, resulting in more than 30,000 deaths (Longthorne, Subramanian, & Chen, 2010).

Are others likely to agree with high self-assessments?

Drivers may believe that others would likely agree with their high self-assessments due to a "bias blind spot" where they recognize bias in others but not in themselves (Dunning, Johnson, Ehrlinger, & Kruger, 2003; Ehrlinger, Gilovich, & Ross, 2005; Pronin, 2007; Pronin, Lin, & Ross, 2002; see also "naïve realism"; Ross & Ward, 1996). The bias blind spot is thought to be due to egocentrism, with people having knowledge about their own beliefs and thoughts, but having less insight into that of others' (Kruger, 1999; Kruger & Burrus, 2004; Windschitl, Kruger, & Simms, 2003). A lack of insight into the thoughts of others could lead people to think that others would view them as an excellent driver because, at least in their own minds, they *are* excellent. Of course, having a bias blind spot is contingent upon the assumption that people are in fact making biased self-assessments and this assumption may not hold true. Further, it is possible that egocentric tendencies mostly arise when information about others' views is scarce or difficult to judge (Kruger, Windschitl, Burrus,

[1]However, people do not always overestimate their abilities; a below-average effect occurs when people assess their abilities on hard or rare tasks (Kruger, 1999; Moore & Kim, 2003; Windschitl et al., 2003).

Fessel, & Chambers, 2008). Driving is, on the other hand, a public activity with many opportunities for feedback (e.g., "backseat drivers"; people "honking" at them). As such, people may be less susceptible to egocentric biases, and have an increased awareness that others are likely to maintain different views of their driving ability.

Indeed, research has shown that participants are capable of perceiving the perspective of others (Epley, Savitsky, & Gilovich, 2002; although they may be still at least somewhat, egocentrically biased in their predictions of others' beliefs; Epley, Keysar, Van Boven & Gilovich, 2004). People's meta-perceptions of how others are likely to describe their personality can be quite accurate with people recognizing that others are likely to have varying opinions about their personality based on the context of their previous interactions (Carlson & Furr, 2009; Carlson, Furr, & Vazire, 2010; Kwan, John, Kenny, Bond, & Robbins, 2004; although see Kenny & Depaulo, 1993). This suggests that if people are aware that others will likely view them as self-enhancing, they may also have a mental model of why others would have that perspective. For instance, people may understand that others have a different, idiosyncratic definition for what it means to be a "good" driver.

Why others might disagree—idiosyncratic definition of ability

Use of idiosyncratic definitions causes an increased better-than-average effect and is particularly likely when tasks or traits are ambiguous, enabling people to generate and then evaluate their performance against definitions that best highlight their strengths (Dunning, Leuenberger, & Sherman, 1995; Dunning & McElwee, 1995; Dunning, Meyerowitz, & Holzberg, 1989; Hayes & Dunning, 1997; see also Santos-Pinto & Sobel, 2005) or when a group member has a specific, identifying idiosyncratic characteristic for which it is superior or inferior to the rest of the group (Chambers, 2010). Critical to the present research, there is no universally agreed-upon definition for "good" driving ability, suggesting that idiosyncratic definitions may be at play. For example, one person may believe that it is most important to be a courteous and safe driver, while another person might believe it is most important to be a fast and aggressive driver—and motorists may be aware of these alternative views, but still adhere to their own perspective. Also, people may see themselves as unique in their particular driving ability and consider the characteristics that make them unique to make them superior drivers (in line with the unique-attributes hypothesis; Chambers, 2010).

If people are aware that their high self-assessments are due to their use of idiosyncratic definitions of driving ability, this opens the possibility that they are not biased, or at least not as biased as previously thought, in their self-assessments. A person's specific definition of driving ability might reflect both why and where they drive (e.g., a pizza delivery person in Alaska) and best fit their particular needs (Santos-Pinto & Sobel, 2005). Further, they may have put more effort into developing the skills most important to their driving style (Van den Steen, 2004). In line with this notion, researchers in both psychology (Harris & Hahn, 2011; Moore, 2007; Moore & Cain, 2007; Moore & Small, 2007; Roy, Liersch, & Broomell, 2011) and economics (Santos-Pinto & Sobel, 2005; Van den Steen, 2004) have demonstrated that what might appear to be a self-serving or optimistic bias might in fact be due to rational processes. For example, people might only choose to perform tasks for which they believe their ability level is very high (better than average) in an attempt to ensure a positive outcome, making it seem like they are overoptimistic about *all* their abilities (Van den Steen, 2004).

Overview of the studies

Here we examined whether or not people—more than 600 students at a large, commuter-dominated public university in California—were aware of (or blind to) potential discrepancies in self-other views of driving ability. We did so by first asking participants to indicate beliefs about their own self-view ("How do you perceive yourself?"), just as in a typical better-than-average study. However, unlike a typical better-than-average study, we also asked all participants to report their beliefs about how others would view them ("How do others perceive you?"). This design can result in two possible findings. If people are unaware that others might disagree with them about their driving ability, participants' self-assessment of ability should be identical to beliefs about how others would assess them. However, if participants are aware that they and others might hold different views of their ability, participants' self-assessment should be different (higher or lower) relative to beliefs about how others would assess them.

To determine if (possible) differences in participants' beliefs about self and others' views are related to idiosyncratic definitions for what it means to have good ability, participants in Experiments 1 and 2 were not only asked how they and others would *assess* their driving ability, but also how they and others would *define* "good" driving ability. Experiments 2 and 3 further examined the relationship between participants' beliefs about definitions of good performance and participants' perceptions of their ability by comparing self and other assessments against more and less ambiguous definitions of driving ability. Experiment 4 directly evaluated participants' belief about the accuracy of their self-assessment: Was their own assessment, or that of others, correct?

Table 1 Assessment of Driving Ability by Perspective (Self; Other) in Experiments 1, 2, 3, and 4

	Condition	*n*	Self	Other	Difference
Experiment 1	General ability assessment	88	70.4 (18.3)	65.2 (19.8)	5.1 (11.2)*
Experiment 2	General ability assessment	79	66.6 (15.8)	60.6 (20.3)	6.0 (13.9)*
	Specific ability assessment	87	63.8 (25.2)	61.4 (24.2)	2.4 (16.6)
Experiment 3	General ability assessment	101	72.4 (19.1)	67.0 (19.5)	5.4 (11.5)*
	General ability assessment with definition given	101	71.2 (19.2)	66.2 (20.2)	5.0 (15.6)*
	General ability assessment with definition used	102	69.3 (18.5)	68.0 (18.4)	1.3 (10.2)
Experiment 4	General ability assessment	80	66.3 (22.3)	60.7 (22.4)	5.6 (14.4)*

Mean assessment with standard deviation in parenthesis.
*$p < .01$

Experiment 1

Method

Participants

Eighty-eight University of California, San Diego students (57% women) participated. They received course credit for their psychology classes in exchange for participation.

Procedure

Participants completed a five-page questionnaire, one page at a time. When they finished with a page, participants were given the next page. This method ensured that participants were not able to go back and change their earlier responses. The first two pages examined participants' beliefs about their driving ability. The next two pages tapped into what driving skills participants believed to be most important to themselves and to others. Finally, participants were asked to assess their ability on specific driving skills and supply demographic information.

Before making each of their driving ability assessments, participants read the following instruction:

> For the following question, please give a percentile score between 0 and 100, where 0 means everyone is better than you, 50 means you are better than half the other people, and 100 means you are better than everyone else.

Participants supplied two percentile rankings for driving ability: how they assessed themselves ("how would YOU rate YOUR ability to drive a car?") and how they thought others would assess them ("how would OTHERS rate YOU in YOUR ability to drive a car?"). Each of the assessments was recorded on a separate sheet of paper, given one at a time, with the order counterbalanced.

Participants next placed seven driving skills in rank order from most (1) to least (7) important. The seven skills—patience, checking blind spots, speeding, alertness, signaling, braking, and using car mirrors—were those most frequently listed by participants in a pilot study that asked participants to indicate important driving skills ("now please list three aspects of driving that are the most important to *you*"). Participants ranked the skills for themselves and others one page at a time, counterbalanced.

Finally, participants assessed themselves, on a scale from 0 to 100, on each of the seven driving skills from the previous section. Participants also indicated the number of years that they had been driving and the average number of times per week that they drove, along with other demographic information (e.g., gender, age).

Results and discussion

Ability assessments

Results confirmed previous research with participants rating their driving ability as above average, near the 70th percentile (see Table 1 for full results). However, participants also expressed a belief that others would assess them as worse drivers than they would assess themselves: the average participant's "self" assessment was 5.1 percentile points higher than their "other" assessment, $t(87) = 4.30$, $p < .001$, $d = 0.46$. The difference between self and other assessments does not appear to be driven by any disparities between participants: order of assessments (self first or other first), gender of the participant, and level of experience driving (both in terms of number of years driving and number of days per week driving) did not significantly affect the difference between self and other assessments ($ps > .15$).[2] While participants did not believe that others would likely view them as a bad, or even as an average, driver, they did believe that others would discount their driving ability.

Skill rankings

Since participants expressed a belief that others would view them as worse drivers than they viewed themselves, we next

[2]None of these variables affected difference scores in the remaining experiments and, therefore, will not be discussed further.

Table 2 Average Ranking for Specific Driving Skills for Self and for Others in Experiments 1 and 2

	Experiment 1		Experiment 2	
	Self	Others	Self	Others
Alertness	1.95	2.53	2.03	2.51
Patient driving	3.32	3.39	3.44	3.83
Checking blind spots	3.58	3.83	3.59	3.94
Using car mirrors	4.31	4.60	4.36	4.46
Braking	4.58	4.49	4.27	3.82
Speeding	5.11	4.63	5.34	4.31
Signaling	5.15	4.56	5.06	5.14

Table 3 Self-Assessment for Driving Skills as a Function of Perceived Importance for Self and Others in Experiments 1 and 2

	Experiment 1		Experiment 2	
Skill importance	Self	Others	Self	Others
1st	81.2 (1.7)	75.9 (2.1)	76.0 (1.5)	73.4 (1.7)
2nd	80.4 (1.6)	80.1 (1.7)	77.1 (1.5)	71.6 (1.6)
3rd	77.7 (1.9)	77.7 (1.8)	74.3 (1.5)	73.5 (1.6)
4th	79.5 (1.8)	79.5 (2.4)	76.2 (1.5)	73.5 (1.6)
5th	75.7 (2.1)	75.1 (2.2)	73.4 (1.6)	73.8 (1.6)
6th	74.3 (2.2)	74.8 (2.0)	69.1 (1.8)	72.1 (1.7)
7th	63.3 (2.8)	72.2 (2.4)	61.5 (2.0)	69.4 (2.0)

Mean assessment with standard error in parenthesis.

evaluated the possibility that participants might indicate an awareness of generating idiosyncratic definitions for what it meant to be a good driver. Table 2 shows the average ranking for the driving skills participants found most important to themselves and the skills they thought others would find most important. Being alert was frequently ranked as the most important skill by participants while signaling was often ranked as the least important. It should be noted that these results fit with the experience of the authors; clearly signaling your intentions does not seem to be valued in Southern California. Importantly, what skills participants found most valuable to them were not always what they thought would be most valuable to others.

There were differences in perceived importance of the skills for self and others: The average Spearman rank correlation for participants' self and other rankings was $r_s = .56$ (if participants perceived perfect agreement, the correlation would be = 1).[3] Only 32% of the variability in what driving skills others were likely to find important could be explained by what they themselves found important—which translates into an average self-other agreement on about two of the seven driving skills. Participants thought that others would differ somewhat in how they rank ordered the driving skills.

An effect of task order was found when looking at differences in participants' self-other rankings for the seven driving skills: The correlation between self and other rankings was $r_s = .65$ when other rankings were provided first and $r_s = .45$ when self-rankings were provided first, $Z = -2.36$, $p = .02$. In other words, when participants first gave the rank order of skills for others, there was greater correspondence between perceived self and other definitions of driving ability. Similarly, previous research has found that the false consensus effect—people believing that others are more likely than actual to share their opinions—is greatest when the likely opinion of others is reported first (Marks & Miller, 1987; Mullen et al., 1985).

[3]To average the correlations together, individual correlations were converted to Fisher *Z* scores, averaged, and then converted back to a correlation.

Skill assessments

To further explore why participants might express a belief that they would view themselves as better drivers than others would view them, we examined whether participants believed themselves to be good drivers according to their own definition of driving ability (rather than others'). Table 3 shows the average self-ability assessment for the seven skills in participants' rank order for (1) what they believed to be the most important skills, and (2) what they believed others would view as the most important skills. As indicated by a one-way analysis of variance (ANOVA) on self-assessment for a specific skill as a function of participants' perceived importance, participants assessed themselves highest on the driving skills they thought were most important and lowest in the skills they thought were least important, $F(6,522) = 11.94$, $p < .001$, $\eta^2 = .08$; a significant linear trend, $F(1,87) = 31.78$, $p < .001$. However, participants expressed a belief that they were not as good a driver according to someone else's definition: When skills were ordered by perceived importance to others, there was no longer a significant difference in self-assessments for the individual skills, $F(6,522) = 1.98$, $p = .07$, $\eta^2 = .02$. When skill was weighted by importance (multiplied by the reverse score of the ranking), participants were better according to their own definition than the perceived definition of others, $t(87) = 3.79$, $p < .001$, $d = 0.40$.

Summary

Results indicate that participants were aware that others would likely believe that their self-view of ability was inflated. In particular, the majority of participants expressed a belief that others would assess them as worse drivers than they would assess themselves. Furthermore, when participants (a) ranked the importance of various driving skills from their own and others' perspective, and (b) assessed their own abilities for those driving skills, they believed that others would define good driving differently than they did, and viewed themselves as being relatively superior at the driving characteristics they, rather than others, found most important and

worse on the ones they found least important. In combination, results suggest that participants believed others would assess them as worse drivers than they assessed themselves possibly due to differences in how people define "good" driving ability.

Experiment 2

In Experiment 2, the goal was twofold: to replicate the results of Experiment 1, and to determine whether participants' self-inflated views were driven by an understanding that others may have different, idiosyncratic definitions of "good" driving ability.

If participants believe that others are simply judging them harshly, regardless of the task—in other words, if participants have no sophisticated mental model of others' perspective—then it should not matter whether the skills being assessed are ambiguous (or not). Participants should believe that others would simply discount their ability on all skills. However, if participants believe that they inflate their ability assessments because of differences in skill definition—as indicated by the results of Experiment 1—then there should be a smaller difference in self-other assessments when the driving skills being evaluated are more specific (i.e., when there is less ambiguity in the characteristics that make up "good" task performance). Indeed, research has shown that when the skill being assessed is unambiguous, presumably making it more difficult to maintain idiosyncratic definitions of good performance, the better-than-average effect is attenuated (Dunning et al., 1989).

To this end, in Experiment 2, one group of participants supplied self and other assessments for general driving ability (as in Experiment 1), while a second group gave ability assessments for a specific driving skill (e.g., braking; signaling). The specific driving skills were those aspects of driving reported by participants in a pretest as contributing to overall driving ability (see the Procedure section of Experiment 1).

Method

Participants

One hundred sixty-six University of California, San Diego students (71% women) participated. They received course credit for their psychology classes in exchange for participation.

Procedure

One group of participants ($n = 79$) completed the same experiment as described in Experiment 1 (i.e., supplied self and other assessments for general driving ability). The only difference for the second group of participants ($n = 87$) was that they were randomly assigned to provide self and other assessments for one of the seven specific driving skills—alertness; patient driving; checking blind spots; using car mirrors; braking; speeding; or signaling—rather than general driving ability. All participants then supplied rank orderings for the seven specific skills for themselves and for others and rated themselves on each of the skills.

Results and discussion

Ability assessment

The primary result from Experiment 1 was replicated: The group of participants who assessed general driving ability believed that others would assess their ability lower than they did. The average participant's "self" assessment was $M = 5.98$ percentile points higher than their "other" assessment, $t(78) = 3.82$, $p < .001$, $d = 0.43$ (see Table 1 for full results).

As predicted, the self-other difference diminished when the second group of participants evaluated their ability against more specific (i.e., less ambiguous) skills. For these participants, the mean difference between self and other assessments was reduced to $M = 2.43$, and was no longer significantly different from 0, $t(87) = 1.37$, $p = .18$, $d = 0.15$. However, even though there was a reduction in the difference between self-other assessments for the specific skills, a comparison of the self-other differences between the two groups (general vs. specific) indicated that this reduction, while in the predicted direction, was not significant, $t(164) = 1.49$, $p = .14$, $d = 0.23$. Also, while there was a reduction in self-assessment when a less ambiguous skill was rated, as found by Dunning et al. (1989), the difference in self-assessment for the general and specific driving skills was not significant, $t(164) = 0.86$, $p = .39$, $d = 0.13$.

Skill rankings

As found in Experiment 1, there was a difference in perceived importance of the skills for self and others (see Table 2). The average spearman rank correlation for participants' self and other rankings was $r_s = .65$ (42% of the variability in the driving skills others were likely to find important could be explained by what they themselves found important). And, as before, there was an order effect for self-other skill rankings: the correlation between self and other rankings was highest when other ranking was supplied first ($r_s = .71$) and lowest when self-ranking was supplied first ($r_s = .57$), $Z = -3.96$, $p < .001$. Finally, there was no effect of condition (general vs. specific) on skill rankings ($p > .7$).

Skill assessments

Again, results were similar to Experiment 1: Participants assessed themselves highest on the driving skills they thought were more important and lowest in the skills they thought were less important, $F(6,954) = 14.19$, $p < .001$, $\eta^2 = .08$ (a

significant linear trend, $F(1,159) = 37.79$, $p < .001$). Furthermore, when skills were ordered by perceived importance to others, there was no significant difference in self-assessments for the individual skills, $F(6,942) = 1.12$, $p = .35$, $\eta^2 = .007$ (see Table 3). Again, when skill was weighted by importance, participants were better according to their own definition than the perceived definition of others $t(87) = 4.38$, $p < .001$, $d = 0.34$. There was no effect of condition (general vs. specific) on skill assessments ($ps > .2$).

Summary

As in Experiment 1, participants thought that others would assess them as worse drivers than they assessed themselves. Additionally, as before, participants believed others would define driving differently than they did, and that they were better at the task characteristics they, rather than others, found most important. It appears that these discrepancies in self-other definitions of "good" driving cause, at least in part, self-other differences in assessments of ability. When a second group of participants evaluated their own and others' perceptions of their ability using specific, rather than general, driving skills, the self-other difference was attenuated. Results suggest that if the skill being evaluated is more specific, participants may be less able to rely on idiosyncratic definitions of good driving, increasing similarity in beliefs about their own and others' perceptions of their driving. However, the reduction in self-other discounting was not significant, suggesting the possibility that some ambiguity in how the specific driving skills were defined still remained. For example, participants may have developed idiosyncratic definitions for what it meant to be a patient or alert driver. Experiment 3 further examined the relationship between task ambiguity and differences in self and other assessments.

Experiment 3

In Experiment 3, we investigated whether self-other assessment differences could be fully attenuated by eliminating ambiguity surrounding the definition of driving ability. A portion of participants were asked to assess driving ability using an expert, outside definition of what it means to be a good driver developed by the National Safety Council (see Appendix). If presenting participants with the National Safety Council's definition decreases self-other assessment differences, it would suggest that ambiguity in the definition for good driving ability causes differences in self-other assessments.

In addition, we examined whether or not there would be a change in assessments when participants were simply presented with an alternative definition of driving ability versus being *explicitly asked* to use an alternative definition. To this aim, one group of participants was supplied with the National Safety Council's definition and instructed to use it when providing self-other assessments of ability, while another group of participants was simply supplied with the definition with no explicit instruction to use it. If differences in self-other ability assessments remain when participants are not explicitly instructed to use the National Safety Council's definition (but disappear when they were), then this would suggest that participants are choosing to use their own idiosyncratic definition even when alternatives are highly salient. Such a finding would indicate that participants view their idiosyncratic definition as a superior benchmark by which to evaluate their performance.

Method

Participants

Three hundred and four University of California, San Diego students (62% women) participated. They received course credit for their psychology classes in exchange for participation.

Procedure

Participants were randomly assigned to one of three conditions: control ($n = 101$), definition given ($n = 101$), or definition used ($n = 102$). Identical to the first part of Experiment 1, participants in the control condition supplied two percentile rankings for driving ability: how they assessed themselves ("how would *you* assess *your* ability?") and how they thought others would assess them ("how would *others* assess *your* ability?"). Each of the assessments was recorded on a separate sheet of paper, given one at a time, with order counterbalanced. In the definition given and definition used conditions, before completing the self-other assessment task participants read a detailed 10-point list describing good driving behavior developed by the National Safety Council (see Appendix). Only the participants in the definition used condition were specifically directed to base subsequent assessments on the list of good driving behaviors (see Appendix, the bracketed portion of the text represents the additional instruction in the definition used condition).

Results and discussion

A one-way ANOVA on the differences between self and other assessments showed a significant effect of condition, $F(2,301) = 3.19$, $p = .04$, $\eta^2 = .02$ (see Table 1). Post hoc analysis (Fisher's Least Significant Differences test) indicated that this is due to the self and other difference being significantly smaller for the participants in the definition used condition ($M = 1.32$) than for participants in the definition given ($M = 4.98$, $p = .04$) and control conditions ($M = 5.39$, $p = .02$). Furthermore, the difference between self and other assessments was not significant in the definition used

condition, $t(100) = 1.30$, $p = .20$, $d = 0.13$, but was significant in the definition given and control conditions, ts > 3, ps < .01, ds > 0.3. Interestingly, the reduction between self and other ratings was not due to either a significant decrease in self-assessment for participants using the definition, $F(2,301) = 0.70$, $p = .50$, $\eta^2 = .005$, or a significant increase in other assessment when the outside definition was used, $F(2,301) = 0.20$, $p = .82$, $\eta^2 = .001$. There was a slight decrease in self-assessment and a slight increase in other assessment that led to the reduction in self and other differences. Participants in the definition used condition did not view themselves as significantly worse drivers; only they thought others would be more likely to agree with their self-assessment.

When participants assessed themselves using the National Safety Council's detailed definition of driving ability, the difference between self and other assessments disappeared. In other words, it appears that when participants were asked to rely on an alternative, rather than their own idiosyncratic definition for a skill, they believed that they would agree with others' perceptions of their driving ability. Simply informing participants about a possible alternative definition for driving ability was not enough to remove the perceived self and other differences. This result suggests that participants do not use idiosyncratic definitions because they are ignorant of other possible definitions; they choose to use their own definition in the face of alternatives.

The results of the current experiments suggest that people may be aware that their self-assessment of driving ability is possibly biased. Our participants were aware that not everyone would agree with their self-assessment. However, while participants believed others would view them as biased, participants might still disagree with others' assessment. Participants' assessment of their driving ability was based on their own definition of what it meant to be a good driver, and participants likely believed their own definition to be correct. If participants' own definition was believed to be correct, they would perceive themselves as unbiased. Participants may have believed that others—who held an erroneous definition of what it meant to be a good driver—were, in fact, the biased ones.

Indeed, our results appear to support the notion that people view their idiosyncratic definition as superior to others'. In Experiment 3, if participants were able to recognize that their idiosyncratic definition was potentially incorrect, then it seems reasonable that they would correct this mistake when provided with the National Safety Council's definition of good driving. However, self-other assessment differences continued even when participants were made aware of an alternative (expert) definition. Differences were eliminated only when participants were explicitly asked to use the alternative definition. While it appears that participants likely believe their own idiosyncratic definition to be correct, we directly examined this issue in the following experiment.

Experiment 4

In Experiment 4, participants expressed their beliefs about whose perception of their ability they believed to be correct: their own or others'. That is, if there was a difference between perceived self and other assessment, did participants believe one of the assessments to be superior? Participants were again asked to supply self and other assessments of driving ability and then were asked to indicate which assessment best represented their true ability.

Method

Participants

Eighty University of California, San Diego students (71% women) participated. They received course credit for their psychology classes in exchange for participation.

Procedure

Identical to the procedure for examining differences in general driving ability used in the previous three experiments, participants supplied two percentile rankings for driving ability: how they assessed themselves ("how would *you* assess *your* ability?") and how they thought others would assess them ("how would *others* assess *your* ability?"). Each of the assessments was recorded on a separate sheet of paper, given one at a time, with order counterbalanced. Next, participants indicated which of the assessments was most accurate by choosing among three different possible "realities": (1) My assessment reflects my true ability, (2) others' assessment reflects my true ability, or (3) both assessments reflect my true ability.

Results and discussion

As with the previous three experiments, the average participant's "self" assessment was higher than their "other" assessment, $t(79) = 3.47$, $p = .001$, $d = 0.39$ (see Table 1). As can be seen in Table 4, a majority of participants, 55%, reported that their self-assessment would be higher than others' assessment, again indicating awareness that others would have a lower view of their abilities.

Of central interest, results indicate that there was no clear agreement between participants on which assessment, self or other, was correct. The largest percentage of participants, 49%, thought that both self and other assessments were valid, while 34% believed that their own assessment was correct, and 17% believed that others would likely be correct in their assessments. However, who the participants believed to be correct was contingent upon whether or not there was a perceived difference in assessments, $\chi^2(4, n = 80) = 10.75$, $p = .03$, $d = 0.39$, $\phi^2 = .07$. As can be seen in Table 4, the participants who were most likely to self-enhance (relative to

Table 4 Relationship between Differences in Self-Other Assessments and the Assessment Believed to be Correct in Experiment 3. Counts of Participants within Each Category Are Shown

		Who would give you the higher assessment			
Who is correct		Self	Equal	Others	Total
	Self	20	2	5	27
	Both	17	16	6	39
	Others	7	3	4	14
	Total	44	21	15	80

others' view) were also the most likely to indicate that their assessments were correct. However, it should be noted that less than half (45%) of the participants who thought others would give them lower assessments than they gave themselves also believed that their assessment alone reflected their actual ability. Participants who thought that others would agree with their self-assessment were, not surprisingly, also most likely to indicate that both assessments were valid. Finally, there does not appear to be any clear pattern for the small number of participants that thought others would give them a higher assessment.

Overall, results of Experiment 4 show that a majority of participants (55%) expressed a belief that they would assess their driving skills as better than others would assess them. At the same time, the majority of participants (66%) also thought others could or would be correct in their assessments. Indeed, even when data is conditional to the participants who had an inflated self-assessment relative to others' assessment, a minority (45%) indicated that they were exclusively correct in their self-assessment. Otherwise put, a majority of those who believed that others would discount their performance also believed that others might be correct in doing so. Results suggest that even when there is perceived self-other disagreement, participants understand that both self and others may have valid, alternative, views of driving ability.

General discussion

People, when assessing their own abilities, often express a belief that they are better than average (Chambers & Windschitl, 2004; Dunning et al., 2004; Sedikides & Gregg, 2008; Taylor & Brown, 1988). Here we investigated people's meta-perceptions and meta-cognitions about their driving ability: Are people aware that others might not agree with their high self-assessment? If so, do they have insight into why others might disagree?

Others would disagree with self-assessments

The current research shows that participants were aware that their perceptions of their own driving ability would be different than others' perceptions. In particular, in each of the four experiments presented in this paper, a majority of participants expressed a belief that their self-assessment of driving ability would be higher than others' assessment. On average, participants thought that others would assess their driving ability as approximately 10% worse than their self-assessment.

In and of itself, this finding would not necessarily suggest that participants were aware of self-enhancing (or being viewed as doing so). However, results of Experiment 4 indicate that participants were aware of potentially being upwardly biased: Even when people stated that others would discount their performance, the majority of participants indicated that others would or could be correct in providing a lower assessment. It appears as though people do not believe that others are simply being overly critical of them. Instead, participants seem to understand that others have reason for disagreeing with their self-assessment and that others' alternative viewpoint could be correct, even when it conflicts with their own.

People have insight into use of idiosyncratic standards

One cause found for people overestimating their ability is the use of idiosyncratic definitions of ability (Dunning & McElwee, 1995; Dunning et al., 1989, 1995; Hayes & Dunning, 1997; Santos-Pinto & Sobel, 2005). This research examined whether or not participants were aware of the use of idiosyncratic definitions as a specific cause of (potential) bias when assessing their own driving ability. Results of Experiments 1 and 2 indicate that participants believed that others had possible reason to disagree with their self-assessment: participants believed that they were very good according to their own definition of ability, but not as good according to that of others. Further, in Experiments 2 and 3, participants thought that others would be more likely to agree with their assessment when the benchmark by which to evaluate driving ability was less ambiguous (via assessment of more specific driving skills, or the forced application of an explicit definition for good driving), presumably making it more difficult to adhere to idiosyncratic definitions. The results of Experiment 3 also indicate that use of idiosyncratic definitions of ability was not due to ignorance of better

alternatives; when supplied with an alternative definition of driving ability from the National Safety Council, participants appeared to continue using their own self-generated definition, resulting in self-other assessment differences. Only when explicitly asked to use the National Safety Council's alternative definition did participants express a belief that their own and others' assessments would converge.

For driving ability, people appear to be aware of what others think about driving and how it relates to them. Participants consistently indicated that others would disagree with them whether or not they were asked to think about their own or others' assessment first (see Biernat, Manis, & Kobrynowicz, 1997). It is important to note, however, that driving is a particularly public activity, where people may receive feedback on their performance from others. People likely have more information about others' thoughts and opinions surrounding definitions of "good" driving than they do for other skills. Such insight into others' views may help diminish self-inflated assessments when appropriate. For example, when the driving environment changes—e.g., when Southern California students surveyed in our studies need to drive in snowy weather conditions—it may be easier for motorists to appropriately discount their abilities because they are aware that alternative definitions of good performance apply. Research has shown that judgmental overconfidence is reduced or eliminated in the face of ample feedback (e.g., weathermen are very well calibrated, presumably because they receive constant feedback regarding the accuracy of their predictions; Russo & Schoemaker, 1992, see also, Van den Steen, 2004). However, this may not be true for other skills that are less public (Kruger et al., 2008), such as how a person believes they compare to others on traits like creativity and maturity (Williams & Gilovich, 2008).

While previous research (Dunning & McElwee, 1995; Dunning et al., 1989, 1995, 1989; Hayes & Dunning, 1997; Santos-Pinto & Sobel, 2005) and the current studies suggest that people might assess themselves as above average because they focus on their idiosyncratic definitions of ability, it is important to note that this cannot explain the bias in full. Even though the average participant thought that others would have a lower view of their ability, participants still thought that others would view them as being an above-average driver, typically scoring them around the 60th percentile or higher. Unfortunately, we cannot determine how biased the participants in the present studies were since their actual ability level was not measured (e.g., Kwan et al., 2004). In fact, it is possible that the young adults in our study were actually more skilled than average. Alternatively, above-average assessments might be due to the type of task we chose: Driving is a task for which most people are highly proficient and a few are very bad, thus as a result, the majority of people may, in fact, be above average (Roy et al., 2011). Furthermore, we are also unable to determine if participants overstated their driving ability because there is no agreed-upon definition for what it means to be a good driver (see Dunning et al., 1989). Quite possibly, people's individual needs related to their definitions for good driving—whether one regularly drives on side streets or the highway, from near or far, etc. They may put more effort into becoming good at the aspects of driving that are important to them (Van den Steen, 2004). In fact, participants may have good reason to believe that, based on their idiosyncratic definition of driving skill, their self-view of driving ability is correct: The majority of people drive regularly without getting into an accident (Evans, 1991).

Final comments

Participants in our studies realized that others were likely to disagree with their self-assessment of driving ability. Furthermore, participants appeared to understand that self-other assessments would differ because of different self-other definitions for what constitutes good driving. Finally, although participants tended to use their own idiosyncratic definition as the benchmark for self-assessment, participants acknowledged that their self-assessment of ability was not the only potentially correct viewpoint. In combination, results suggest that people may possess a much more sophisticated and nuanced understanding of their ability—as well as how that ability is likely to be viewed by others—than previously thought.

The new insight that our studies provide into people's mental models of their ability not only informs researchers that, theoretically, the better-than-average effect may be a more complex bias than previously thought—it also introduces challenges for policymakers interested in debiasing potentially self-inflated views. For example, what happens when people believe that they are applying the correct definition of ability, but the reality is that there might be an alternative, superior assessment standard? Our research (e.g., Experiment 3) suggests that increasing awareness of alternative performance benchmarks may not be enough. Instead, people may need to be encouraged (e.g., incentivized) to adhere to alternative definitions in order to diminish inflated self-perceptions.

Consider, for example, that one study of 19 intersections across four states logged 3.2 traffic signal violations per hour (Hill & Lindly, 2003). Presumably, this high violation rate indicates that many people may feel that, for them, following certain traffic laws is not a critical component of their definition of good driving behavior. It is even possible that violators believe the ability to run traffic signals without harm to self or others makes them a particularly *exceptional* driver. However, such perceptions would be fallacious: A nationwide study of fatal accidents in 1999 and 2000 estimated that 20% of fatal crashes involved drivers that did not obey traffic signals (Brittany, Campbell, Smith, & Najm, 2004). However—as

our research suggests—for traffic signal violators, simply increasing awareness of the importance of following traffic signals may be ineffective. Instead, it may be necessary to encourage adherence to traffic signals via other methods such as installing "red light" cameras that capture traffic violations (and subsequently issue tickets to violators). Indeed, many communities have implemented red light cameras with much success (in fact, some claim that red light cameras are too effective; Johnson, 2008).

Consider, also, recent attempts to reduce use of handheld communication devices while driving. For a portion of drivers, their ability to text message while driving might be one of the characteristics that they believe makes them a unique and superior driver (or at the very least that "texting" while driving does not make them a bad driver). Simply informing people that this self-view is misguided might not be sufficient to significantly curb use of hand held devices.

Ultimately, our results indicate that where some interventions may fail, there might be reason to be optimistic about the efficacy of alternative interventions aimed at increasing safe driving behaviors. When considering alternative interventions, not only is it important to increase motorists' awareness that there are many different definitions for good driving behavior, but also discovering methods to increase adherence to those different definitions (when appropriate) may be just as important. Research is needed to determine how to motivate people to consistently shift to definitions of good driving behavior that will best optimize safe driving practices.

References

Alicke, M. D., Klotz, M. L., Breitenbecher, D. L., Yurak, T. J., & Vredenburg, D. S. (1995). Personal contact, individuation, and the better-than-average effect. *Journal of Personality and Social Psychology*, *68*, 804–825.

Biernat, M., Manis, M., & Kobrynowicz, D (1997). Simultaneous assimilation and contrast effects in judgments of self and other. *Journal of Personality and Social Psychology*, *73*, 254–269.

Brittany, N., Campbell, B. N., Smith, J. D., & Najm, W. G. (2004). *Analysis of fatal crashes due to signal and stop sign violations*. Report no. DOT HS-809-779. Washington, DC: National Highway Traffic Safety Administration.

Carlson, E. N., & Furr, R. M. (2009). Evidence of differential meta-accuracy: People understand the different impressions they make. *Psychological Science*, *20*, 1033–1039.

Carlson, E. N., Furr, R. M., & Vazire, S. (2010). Do we know the first impressions we make? Evidence for idiographic meta-accuracy and calibration of first impressions. *Social Psychological and Personality Science*, *1*, 94–98.

Chambers, J. R. (2010). Why the parts are better (or worse) than the whole: The unique-attributes hypothesis. *Psychological Science*, *21*, 252–259.

Chambers, J. R., & Windschitl, P. D. (2004). Biases in social comparative judgments: The role of nonmotivated factors in above-average and comparative-optimism effects. *Psychological Bulletin*, *130*, 813–838.

Dunning, D., Heath, C., & Suls, J. M. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychological Science in the Public Interest*, *5*, 69–106.

Dunning, D., Johnson, K., Ehrlinger, J., & Kruger, J. (2003). Why people fail to recognize their own incompetence. *Current Directions in Psychological Science*, *12*, 83–87.

Dunning, D., Leuenberger, A., & Sherman, D. A. (1995). A new look at motivated inference: Are self-serving theories of success a product of motivational forces? *Journal of Personality and Social Psychology*, *69*, 58–68.

Dunning, D., & McElwee, R. O. (1995). Idiosyncratic trait definitions: Implications for self-description and social judgments. *Journal of Personality and Social Psychology*, *68*, 936–946.

Dunning, D., Meyerowitz, J. A., & Holzberg, A. D. (1989). Ambiguity and self-evaluation: The role of idiosyncratic trait definitions in self-serving assessments of ability. *Journal of Personality and Social Psychology*, *57*, 1082–1090.

Ehrlinger, J., Gilovich, T., & Ross, L. (2005). Peering into the bias blind spot: People's assessment of bias in themselves and others. *Personality and Social Psychology Bulletin*, *31*, 680–692.

Epley, N., Keysar, B., Van Boven, L., & Gilovich, T. (2004). Perspective taking as egocentric anchoring and adjusting. *Journal of Personality and Social Psychology*, *83*, 300–312.

Epley, N., Savitsky, K., & Gilovich, T. (2002). Empathy neglect: Reconciling the spotlight effect and the correspondence bias. *Journal of Personality and Social Psychology*, *87*, 327–339.

Evans, L. (1991). *Traffic safety and the driver*. New York: Van Nostrand Reinhold.

Harris, A. J. L., & Hahn, U. (2011). Unrealistic optimism about future life events: A cautionary note. *Psychological Review*, *118*, 135–154.

Hayes, A. F., & Dunning, D. (1997). Construal processes and trait ambiguity: Implications for self-peer agreement in personality judgment. *Journal of Personality and Social Psychology*, *72*, 644–677.

Hill, S. E., & Lindly, J. K. (2003). *Red light running prediction and analysis*. UTCA report no. 02112. Tuscaloosa, AL: University Transportation Center for Alabama.

Johnson, A. (2008, March 21). Red light cameras too good for their own good? *MSNBC*. Retrieved March 8, 2010, from http://www.msnbc.msn.com/id/23710970/ns/us_news-crime_and_courts/

Kenny, D. A., & DePaulo, B. M. (1993). Do people know how others view them? An empirical and theoretical account. *Psychological Bulletin*, *114*, 145–161.

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.
Kruger, J., & Burrus, J. (2004). Egocentrism and focalism in unrealistic optimism (and pessimism). *Journal of Experimental Social Psychology*, *40*, 332–340.
Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, *77*, 1121–1134.
Kruger, J., Windschitl, P. D., Burrus, J., Fessel, F., & Chambers, J. R. (2008). The rational side of egocentrism in social comparisons. *Journal of Experimental Social Psychology*, *44*, 220–232.
Kwan, V. S. Y., John, O. P., Kenny, D. A., Bond, M. H., & Robbins, R. W. (2004). Reconceptualizing individual differences in self-enhancement bias: An interpersonal approach. *Psychological Review*, *111*, 94–110.
Lajunen, T., & Summala, H. (1995). Driving experience, personality, and skill and safety-motive dimensions in drivers' self-assessments. *Personality and Individual Differences*, *19*, 307–318.
Longthorne, A., Subramanian, R., & Chen, C. (2010). *An analysis of the significant decline in motor vehicle crashes in 2008*. Report no. DOT HS-811-346. Washington, DC: National Highway Traffic Safety Administration.
Marks, G., & Miller, N. (1987). Ten years of research on the false-consensus effect: An empirical and theoretical review. *Psychological Bulletin*, *102*, 72–90.
Moore, D. A. (2007). Not so above average after all: When people believe they are worse than average and its implications for theories of bias in social comparison. *Organizational Behavior and Human Decision Processes*, *102*, 42–58.
Moore, D. A., & Cain, D. M. (2007). Overconfidence and underconfidence: When and why people underestimate (and overestimate) the competition. *Organizational Behavior and Human Decision Processes*, *103*, 197–213.
Moore, D. A., & Kim, T. G. (2003). Myopic social predictions and the solo comparison effect. *Journal of Personality and Social Psychology*, *85*, 1121–1135.
Moore, D. A., & Small, D. A. (2007). Error and bias in comparative judgment: On being both better and worse than we think we are. *Journal of Personality and Social Psychology*, *92*, 972–989.
Mullen, B., Atkins, J. L., Champion, D. S., Edwards, C., Hardy, D., Story, J. E., et al. (1985). The false consensus effect: A meta-analysis of 115 hypothesis tests. *Journal of Experimental Social Psychology*, *21*, 262–283.
Pronin, E. (2007). Perception and misperception of bias in human judgment. *Trends in Cognitive Sciences*, *111*, 37–43.
Pronin, E., Lin, D. Y., & Ross, L. (2002). The bias blind spot: Perceptions of bias in self versus others. *Personality and Social Psychology Bulletin*, *28*, 369–381.
Ross, L., & Ward, A. (1996). Naive realism: Implications for social conflict and misunderstanding. In T. Brown, E. Reed, & E. Turiel (Eds.), *Values and knowledge* (pp. 103–135). Hillsdale, NJ: Lawrence Erlbaum Associates.
Roy, M. M., Liersch, M. J., & Broomell, S. (2011). *People believe that they are prototypically good or bad*. Manuscript submitted for publication.
Russo, J. E., & Schoemaker, P. J. H. (1992). Managing overconfidence. *Sloan Management Review*, *33*, 7–17.
Santos-Pinto, L., & Sobel, J. (2005). A model of positive self-image in subjective assessments. *The American Economic Review*, *95*, 1386–1402.
Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives on Psychological Science*, *3*, 102–116.
Svenson, O. (1981). Are we more risky and more skillful than our fellow drivers? *Acta Psychologica*, *47*, 143–148.
Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social-psychological perspective on mental health. *Psychological Bulletin*, *103*, 193–210.
Van den Steen, E. (2004). Rational overoptimism (and other biases). *The American Economic Review*, *94*, 1141–1151.
Waylen, A. E., Horswill, M. S., Alexander, J. L., & McKenna, F. P. (2004). Do expert drivers have a reduced illusion of superiority? *Transportation Research Part F*, *7*, 323–331.
Williams, A. F. (2003). Views of U.S. drivers about driving safety. *Journal of Safety Research*, *34*, 491–494.
Williams, E. F., & Gilovich, T. (2008). Do people really believe that they are above average. *Journal of Experimental Social Psychology*, *44*, 1121–1128.
Windschitl, P. D., Kruger, J., & Simms, E. (2003). The influence of egocentrism and focalism on people's optimism in competition: When what affects us equally affects me more. *Journal of Personality and Social Psychology*, *85*, 389–408.

Appendix

Please read the National Safety Council's top 10 most important characteristics of good driving:

1. Don't leave the driveway without securing each passenger in the car. Safety belts save thousands of lives each year!
2. Remember that driving too fast or too slow can increase the likelihood of collisions.
3. Be alert! If you notice a car straddling the center line, weaving, making wide turns, stopping abruptly, or responding slowly to traffic signals, the driver may be impaired.
4. Avoid an impaired driver by slowing down, letting the driver pass, pulling onto the shoulder, or turning right at the nearest corner. If it appears that an oncoming car is crossing into your lane, pull over to the roadside, sound the horn and flash your lights.
5. Notify the police immediately after seeing a motorist who is driving suspiciously.
6. Follow the rules of the road. Don't contest the "right of way" or try to race another car during a merge.

7. Don't stop in the road to talk with a pedestrian or other drivers.
8. Avoid eye contact or making obscene gestures with/at an aggressive driver.
9. Don't tailgate.
10. Remember, while driving, be cautious, aware and responsible.

[Now, according to National Safety Council's definition of good driving ability, please evaluate the following question.] When evaluating the question, give a percentile score between 0 and 100, where 0 means everyone is better than you, 50 means you are better than half the other people, and 100 means you are better than everyone else.

Compared to other car drivers, how would YOU* assess in YOUR ability to drive a car [in accordance with the National Safety Council's definition of good driving ability]?

Assessment on a scale of 0 to 100: _____

[Now, according to National Safety Council's definition of good driving ability,] please evaluate this second question. Again, when evaluating the second question, give a percentile score between 0 and 100, where 0 means everyone is better than you, 50 means you are better than half the other people, and 100 means you are better than everyone else.

Compared to other car drivers, how would OTHERS* assess YOU in YOUR ability to drive a car [in accordance with the National Safety Council's definition of good driving ability]?

Assessment on a scale of 0 to 100: _____

- Please note that the order of Self and Other assessments was counterbalanced.