

## Referent Status Neglect: Winners Evaluate Themselves Favorably Even When the Competitor is Incompetent

By: [Ethan Zell](#), Mark D. Alicke, Jason E. Strickhouser

Zell, E., Alicke, M.D., Strickhouser, J.E. (2015). Referent status neglect: Winners evaluate themselves favorably even when the competitor is incompetent. *Journal of Experimental Social Psychology*, 56, 18-23. doi: 10.1016/j.jesp.2014.08.004

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### **Abstract:**

People evaluate themselves more favorably when they outperform a referent (downward comparison) than when they underperform a referent (upward comparison). However, research has yet to examine whether people are sensitive to the status of the referent during social comparison. That is, does defeating a highly skilled referent yield more favorable self-evaluations than defeating an unskilled referent? Does losing to an unskilled referent yield less favorable self-evaluations than losing to a skilled referent? To address these questions, participants learned that they performed better or worse than another person (social comparison) who ranked above average or below average (referent status). Social comparison information had a more pronounced influence on self-evaluations than referent status information. Furthermore, consistent with self-enhancement theories, participants selectively highlighted referent status information when it had favorable implications for the self. These findings demonstrate that people neglect referent status information, leading winners to evaluate themselves favorably even when the competitor is incompetent.

**Keywords:** Social comparison | Self-evaluation | Self-perception | Social judgement

### **Article:**

Scholars have long recognized that thoughts and feelings about the self are in part determined by how one stacks up in comparison to relevant peers (Festinger, 1954 and Wood, 1989). These social comparisons are a ubiquitous and perhaps automatic component of everyday experience. For example, social comparisons occur among classmates, coworkers, and teammates, as well as friends, family, and intimate partners. Among the most common types of social comparisons are those that pertain to ability judgments (Alicke, Zell, & Guenther, 2013). Although there are some exceptions, people typically desire superior abilities. That is, self-evaluations are elevated upon learning that one's performances rank superior to others (downward comparison), and self-evaluations are deflated upon learning that one's performances rank inferior to others (upward comparison).

Numerous studies have supported the basic proposition that upward comparisons typically yield less flattering self-perceptions of ability than downward comparisons (Markman and McMullen, 2003 and Mussweiler, 2003). However, this focus on comparison direction (upward, downward) neglects a core component of the comparison process. Not only do people know whether they are better or worse than a competitor, but they may also have insight into the ability of the competitor more generally. In some contexts, people rank better or worse than a competitor that places at the top of the performance distribution (e.g., a star athlete). In other contexts, people rank better or worse than a competitor that places at the bottom of the performance distribution (e.g., a struggling athlete). We refer to knowledge specifying the general position of the competitor as *referent status information*.

Surprisingly, despite enormous empirical attention granted to upward and downward social comparisons over the last several decades (Fiske, 2011, Guimond, 2006 and Suls and Wheeler, 2000), researchers have largely ignored whether people are sensitive to referent status information. In a relevant study, college students who outperformed an adult on an intelligence test felt better about themselves than students who outperformed a 10-year old; similarly, students who underperformed a 10-year old felt worse about themselves than students who underperformed an adult (Webster, Powell, Duvall, & Smith, 2006). These findings provide initial support for the notion that people are sensitive to aspects of the referent during social comparison, such as age. Nonetheless, research to our knowledge has not systematically varied referent status information to examine whether it moderates social comparison effects.<sup>1</sup>

## **Theoretical framework**

Logically, one would assume that people *should* be highly sensitive to the status of the referent. Outperforming a strong referent should yield more favorable self-perceptions than outperforming a weak referent. Similarly, underperforming a weak referent should yield less favorable self-perceptions than underperforming a strong referent. However, we propose that people's reactions to referent status information may defy logical prescriptions. Specifically, we utilize prior research on the dominance of local comparisons (Zell & Alicke, 2010) as well as self-

enhancement ( Alicke & Sedikides, 2009) to propose that people will largely neglect referent status information but selectively highlight it when it serves ego-enhancement needs.

Along these lines, previous research on the local dominance effect indicates that self-evaluations of ability are more sensitive to one's rank in immediate local groups (i.e., local comparisons) than one's rank in larger, more representative groups (i.e., general comparisons). For example, learning that one ranks best or worst among a group of five competitors has a stronger influence on self-evaluations than learning that one ranks better than 84% or 32% of 1500 previous test takers, when people receive both feedback types (Zell & Alicke, 2009). In addition, learning that one ranks better or worse than a single competitor has a stronger influence on self-evaluations than learning that one ranks above average or below average, when people receive both feedback types (Buckingham & Alicke, 2002). The interpretation of these findings is that people are highly tuned to social comparisons with competitors in immediate local environments, but that people are less affected by pallid statistical information indicating one's rank in larger samples. Extrapolating from local dominance research, we argue that social comparison information indicating one's position in comparison to a referent may have a stronger influence on ability self-evaluations than broader, contextual information indicating the status of the referent.

Importantly, however, referent status information is unique from general comparisons studied in prior research, in that it does not directly pertain to the self. Rather than informing people that *their performance* ranked above average or below average (e.g., Buckingham and Alicke, 2002 and Zell and Alicke, 2009), referent status information specifies that a *competitor's performance* ranked above average or below average. Thus, referent status is distinct from other types of general comparison in that it does not directly reflect one's own performance. Further, another unique aspect of referent status information is that it serves to augment the meaning of local comparisons. Outperforming a high status competitor should yield altogether different reactions than outperforming a low status competitor. However, it remains to be seen whether people take into account the status of the referent when estimating their ability.

Beyond the contribution of local and general comparison processes, reactions to referent status information may also be colored by desires to maintain a positive self-image. According to a robust literature on self-enhancement and self-protection (Alicke and Sedikides, 2009 and Sedikides and Gregg, 2008), a variety of construal processes can be employed to salvage a positive self-image in the context of self-evaluative threat. Thus, one might anticipate that people will selectively highlight referent status information when it has favorable implications for the self. This selective attention to referent status might be especially pronounced following upward comparison than downward comparison, because people often seek flattering information about themselves following upward comparison as a coping mechanism (Taylor & Lobel, 1989).

Indirect support for our position can be found in recent research demonstrating that people who win a prize are happy regardless of the prize amount (i.e., \$3 vs. \$7), but people who lose a prize

are less bothered when the prize amount is low as opposed to high (Kassam, Morewedge, Gilbert, & Wilson, 2011). Negative experiences, such as losing a prize, presumably trigger more complex attributional processes, leading people to consider additional standards beyond the most salient ones. Although social comparisons with peers in the local environment are highly salient, statistical information specifying referent status is more abstract. By this logic, we propose that people should be more sensitive to referent status information following upward comparison than downward comparison. That is, winning a contest should yield relatively favorable self-evaluations regardless of whether the competitor is competent or incompetent, yet losing a contest should yield more favorable self-evaluations when the competitor is competent as opposed to incompetent.

## **Overview**

The current study examined whether referent status moderates the effect of social comparison information on self-evaluations. Participants completed a lie detection test and received manipulated feedback about their performance. Social comparison was manipulated by telling participants that their test performance ranked better (downward comparison) or worse (upward comparison) than the last participant to complete the study. Additionally, referent status was manipulated by telling participants that the last participant ranked above average or below average; participants in control conditions did not receive referent status information. We anticipated that social comparison information would have a more pronounced influence on self-evaluations than referent status information. Furthermore, we anticipated that referent status information would have a greater influence on self-evaluations of participants in the upward comparison conditions than participants in the downward comparison conditions.

## **Method**

Participants were 194 introductory psychology students (153 female,  $M_{\text{age}} = 19.01$ ) at a university in the Southeastern United States who participated in groups of one to six students for course credit. The racial/ethnic composition of the sample was as follows: 60 African American, 8 Asian, 104 Caucasian, 9 Hispanic, and 6 other race/ethnicity. Most participants were born in the USA (178) and most grew up in the USA (184). To provide adequate statistical power, data were collected until at least 30 participants were obtained in each of the 6 experimental groups. Data were not analyzed until the entire sample was obtained. No participant was excluded from the statistical analyses reported below. Experimental stimuli and questionnaires were presented to participants by computer using MediaLab (Empirisoft, 2010). Participants completed study measures in private, isolated booths.

Upon arrival, participants were told that the purpose of the study was to measure the lie detection ability of students at their university. In an effort to increase the perceived importance of the task, participants were told that people who perform well on lie detection tests are more successful in a variety of occupations including psychology, business, education, and law. The

lie detection test that was administered consisted of 25 brief video clips where speakers indicated their opinion on current events and campus issues (e.g., *Do you think that your campus is safe?*, *Do you think that 18 year olds should be able to legally drink alcohol?*). After viewing each video clip, participants estimated whether the speaker was telling the truth or lying. Previous research found that performance on lie detection tests is sufficiently ambiguous to promote the believability of both positive and negative performance feedback (e.g., Buckingham & Alicke, 2002).<sup>2</sup>

### Performance feedback

After completing the test, participants received feedback about their performance that was determined using random assignment. *Social comparison* was manipulated by telling participants that they performed better (downward comparison) or worse (upward comparison) than the last student to complete the study on the same computer as them. Specifically, all participants were told that the last student to complete the study on their computer correctly answered 17 out of 25 questions on the test. Some participants were told that they correctly answered 20 out of 25 questions, and therefore ranked better than the previous participant. Other participants were told that they correctly answered 14 out of 25 questions on the test, and therefore ranked worse than the previous participant.

*Referent status* was manipulated by telling participants that the last student to complete the study on their computer ranked above average or below average in comparison to several hundred students at their university. Participants in control conditions did not receive referent status information.<sup>3</sup> A summary of the feedback conditions is provided in Table 1, and a sample of the feedback protocol is provided in Table 2. Among participants who received both sets of feedback, social comparison information was always provided before referent status information. This order was selected so that social comparison processes would be activated before the potential moderating influence of referent status was introduced.

**Table 1.** Feedback conditions and sample sizes.

Condition	Own score	Referent score	Referent status	<i>n</i>
1	20	17	Above average	33
2	20	17	Below average	32
3	20	17	None provided	32
4	14	17	Above average	33
5	14	17	Below average	32
6	14	17	None provided	32

*Note.* Test scores were out of 25 total questions.

**Table 2.** Sample feedback protocol.

Slide	LIE DETECTION TEST RESULTS:
1:	You correctly answered 20 out of 25 questions on the test.

	The last student on this computer correctly answered 17 out of 25 questions. This student ranked ABOVE AVERAGE.
Slide 2:	LIE DETECTION TEST RESULTS:
	A graphical depiction of your score and the previous participant's score is provided below.
	–
	22
	21
	20—Your score
	19
	18
	17—Last student's score (ABOVE AVERAGE)
	16
	15
	14
	13
	12
	–

### Dependent measures

Next, participants completed a brief questionnaire that assessed their reactions to the feedback. Participants first evaluated their lie detection performance (*How well did you perform on the lie detection test?*) and ability (*How would you rate your lie detection ability?*) on 1 (*very poorly/bad*) to 9 (*very well/good*) scales. These judgments were aggregated to create one index of self-evaluations ( $r = .79$ ). Participants also evaluated the performance (*How well did the last student on this computer perform on the lie detection test?*) and ability (*How would you rate the last student's lie detection ability?*) of the referent. These judgments were aggregated to create one index of referent-evaluations ( $r = .89$ ).

Participants then completed manipulation checks where they were asked to recall the number of questions they and the last student correctly answered on the test out of 25. All of the participants correctly recalled the scores that they received. Lastly, participants were debriefed for suspicion about the provided feedback. No participant expressed undue suspicion about the validity of the test scores.

## Results

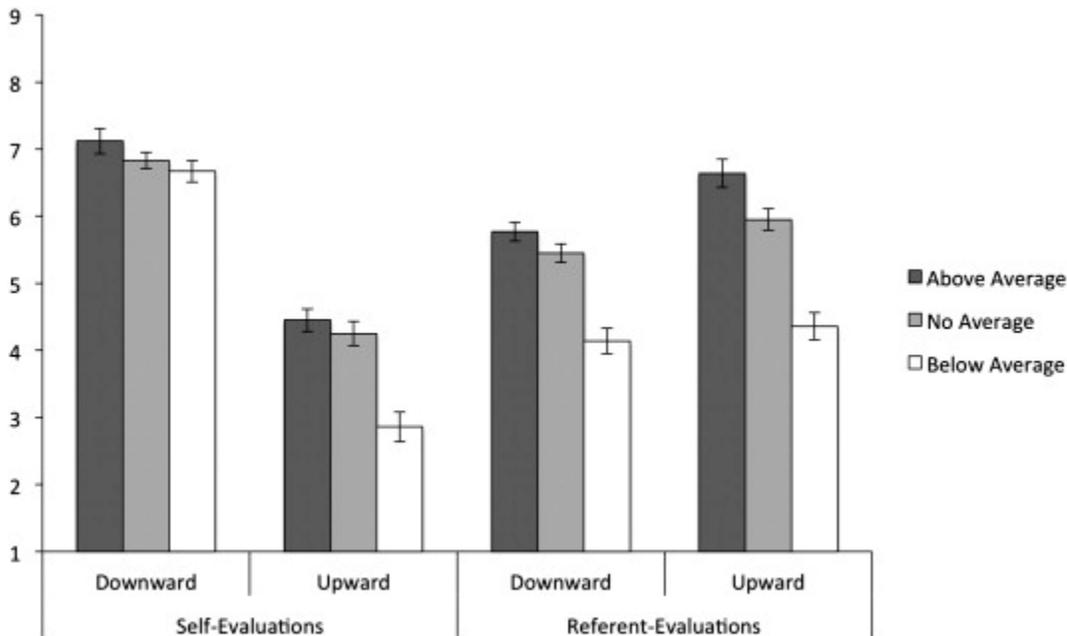
### Self-evaluations

A 2 (social comparison: upward, downward)  $\times$  3 (referent status: above average, below average, none) ANOVA was conducted on self-evaluations. This analysis yielded a significant main effect of social comparison,  $F(1, 188) = 434.08, p < .001, \eta_p^2 = .70$ . Participants in the

downward comparison conditions ( $M = 6.88, SD = 0.93$ ) evaluated themselves significantly more favorably than participants in the upward comparison conditions ( $M = 3.86, SD = 1.29$ ).

The main effect of referent status was also significant,  $F(2, 188) = 18.04, p < .001, \eta_p^2 = .16$ . We conducted planned contrasts to further explore the main effect of referent status. Participants told that the referent ranked below average ( $M = 4.77, SD = 2.21$ ) evaluated themselves significantly less favorably than participants in the above average ( $M = 5.79, SD = 1.69$ ) and no average referent conditions ( $M = 5.54, SD = 1.56$ ),  $t(191) = 3.16, p = .001, d = 0.52$  and  $t(191) = 2.38, p = .02, d = 0.40$ , respectively. There was no significant difference in self-evaluations when comparing participants in the above average and no average referent conditions,  $t(191) = 0.77, p = .44, d = 0.15$ .

Finally, the social comparison by referent status interaction was significant,  $F(2, 188) = 7.48, p = .001, \eta_p^2 = .07$  (see Fig. 1). Planned contrasts were conducted to decompose the interaction. First, we tested our prediction that social comparison information would have a more potent influence on self-evaluations than referent status information. Consistent with this prediction, participants evaluated themselves significantly more favorably when they ranked better than a below average referent than when they ranked worse than an above average referent,  $t(188) = 8.67, p < .001, d = 2.20$ .



**Fig. 1.** Target-evaluations as a function of social comparison (downward, upward) and referent status (above average, no average, below average). Error bars are  $\pm 1 SEM$ .

Additional contrasts examined whether participants were differentially sensitive to referent status information as a function of social comparison. Participants in the downward comparison conditions were largely insensitive to referent status information. Specifically, downward

comparison participants told that the referent ranked above average did not evaluate themselves significantly more favorably than downward comparison participants in the below average and no average referent conditions,  $t(188) = 1.80, p = .07, d = 0.45$  and  $t(188) = 1.17, p = .24, d = 0.31$ , respectively. Further, downward comparison participants told that the referent ranked below average did not evaluate themselves significantly less favorably than downward comparison participants in the no average referent condition,  $t(188) = 0.62, p = .54, d = 0.20$ . Thus, downward comparison participants evaluated themselves relatively favorably, regardless of the position of the referent in the performance distribution (i.e., above average, below average, none).

However, participants in the upward comparison conditions were sensitive to referent status information. Specifically, upward comparison participants evaluated themselves significantly more favorably when the referent ranked above average than below average,  $t(188) = 6.37, p < .001, d = 1.41$ . Similarly, upward comparison participants evaluated themselves significantly more favorably when they received no referent status information than when they were told that the referent ranked below average,  $t(188) = 5.51, p < .001, d = 1.21$ . There was no significant difference between upward comparison participants in the no average and above average referent conditions,  $t(188) = 0.82, p = .42, d = 0.20$ .

#### Referent-evaluations

A 2 (social comparison: upward, downward)  $\times$  3 (referent status: above average, below average, none) ANOVA was conducted on referent-evaluations. This analysis yielded a significant main effect of referent status,  $F(2, 188) = 67.96, p < .001, \eta_p^2 = .42$  (see Fig. 1). A planned comparison showed that referent-evaluations were significantly more favorable when the referent ranked above average ( $M = 6.20, SD = 1.11$ ) than below average ( $M = 4.25, SD = 1.08$ ),  $t(191) = 10.85, p < .001, d = 1.78$ . Further, participants who did not receive referent status information ( $M = 5.70, SD = 0.87$ ) evaluated the referent significantly more favorably than participants told that the referent ranked below average,  $t(191) = 8.00, p < .001, d = 1.48$ , and significantly less favorably than participants told that the referent ranked above average,  $t(191) = 2.78, p = .006, d = 0.50$ .

The main effect of social comparison was also significant,  $F(1, 188) = 13.76, p < .001, \eta_p^2 = .07$ . Participants in the upward comparison conditions ( $M = 5.66, SD = 1.44$ ) evaluated the referent significantly more favorably than participants in the downward comparison conditions ( $M = 5.13, SD = 1.13$ ). Finally, the social comparison by referent status two-way interaction was not statistically significant,  $F(2, 188) = 1.74, p = .18, \eta_p^2 = .02$ .

#### Self-evaluations versus referent-evaluations

A 2 (social comparison: upward, downward)  $\times$  3 (referent status: above average, below average, none)  $\times$  2 (target: self-evaluations, referent-evaluations) ANOVA was conducted with repeated

measures on the third factor. Of importance, this model yielded a significant social comparison by referent status by target three-way interaction,  $F(2, 188) = 3.34, p = .04, \eta_p^2 = .03$ . In the upward comparison conditions, referent status information had a significant effect on referent-evaluations,  $F(2, 94) = 37.43, p < .001, \eta_p^2 = .44$ , as well as self-evaluations,  $F(2, 94) = 20.42, p < .001, \eta_p^2 = .30$ . Upward comparison participants evaluated the referent and themselves significantly more favorably when the referent ranked above average than below average. In the downward comparison conditions, however, referent status information had a significant effect on referent-evaluations,  $F(2, 94) = 30.95, p < .001, \eta_p^2 = .40$ , but did not have a significant effect on self-evaluations,  $F(2, 94) = 2.00, p = .14, \eta_p^2 = .04$ . Downward comparison participants evaluated the referent but not themselves significantly more favorably when the referent ranked above average than below average.

In sum, whereas self-evaluations were only influenced by referent status information in the upward comparison conditions, referent-evaluations were influenced by referent status information in both the upward and downward comparison conditions. This finding rules out the possibility that participants in the downward comparison conditions did not sufficiently process referent status information; downward comparison participants neglected referent status during self-evaluations, but utilized referent status during referent-evaluations.

## **Discussion**

Although numerous studies have examined reactions to upward and downward comparisons (Fiske, 2011, Guimond, 2006 and Suls and Wheeler, 2000), no previous research to our knowledge has directly tested whether referent status information moderates social comparison effects. The current study fills this critical gap in the social comparison literature. Formal logic would predict that people should be sensitive to referent status. That is, people should evaluate themselves more favorably when they outperform a high status than low status referent. Similarly, people should evaluate themselves less favorably when they underperform a low status than a high status referent. However, results of the current experiment suggest that reactions to referent status information may not follow these normative prescriptions. Specifically, although referent-evaluations were strongly influenced by referent status information, self-evaluations were influenced more strongly by social comparison information.

These findings are consistent with, and contribute to, prior theories specifying that the effect of “local” social comparisons are often stronger than other types of self-relevant information (Zell & Alicke, 2010). Importantly, the current study suggests that local comparisons continue to have a disproportionate influence on self-evaluations even when the meaning of these comparisons is augmented substantially by referent status information. That is, outperforming a competitor in the local environment yields relatively favorable self-evaluations even when the competitor has low rank, and underperforming a competitor in the local environment yields relatively

unfavorable self-evaluations even when the competitor has high rank. Thus, people may be more sensitive to the outcome of social comparisons (upward, downward) than their broader meaning.

Our findings also suggest that ego-defense motives (Alicke & Sedikides, 2009) lead people to selectively highlight referent status information when it allows them to salvage a favorable self-image. Whereas participants neglected referent status in the downward comparison conditions, referent status had a pronounced effect in the upward comparison conditions. These findings illuminate one of a growing number of strategies by which people maintain relatively favorable self-evaluations in the context of self-evaluative threat (Sedikides & Gregg, 2008). Because social comparisons are among the most primary determinants of self-evaluations (Alicke et al., 2013 and Mussweiler, 2003), it is likely that the selective use of referent status information is a common self-protection strategy.

More broadly, our findings have wide implications for self-perception theories. For example, several studies demonstrate that people overestimate their abilities, especially those who rank at the bottom of the performance distribution (Dunning, 2011 and Kruger and Dunning, 1999). People may develop inflated self-views because they focus on downward comparisons with inferior others, even when those comparison others have very low rank. Indeed, no matter how low people rank themselves, they can almost always find someone who is doing worse (Taylor & Lobel, 1989). In addition, our findings help explain research showing that students evaluate themselves more favorably when they have a high rank at an inferior school than when they have a low rank at a superior school, despite objectively equivalent performance (i.e., the big-fish-little-pond effect; Liem et al., 2013 and Marsh, 1987). Whereas the first group engages in frequent downward comparisons, the second group engages in frequent upward comparisons. Our results suggest that student self-perceptions and career aspirations may be strongly influenced by these social comparisons, despite the fact that comparison referents at high rank and low rank schools are not representative of the student population as a whole.

Finally, our results help explain apparently puzzling findings in the social comparison literature: people are less satisfied with themselves after comparing their accomplishments to superstars (Lockwood & Kunda, 1997), their attractiveness to super-models (Grabe, Ward, & Hyde, 2008), and their athleticism to professional athletes (Mussweiler, Ruter, & Epstude, 2004). One might expect that people would disregard comparisons to such extreme referents. However, the present findings suggest that people fail to adequately appreciate the status of the referent during social comparison. Future research is needed to more directly test whether comparisons to extreme referents, such as a competitor who ranks at the 99th percentile, yield greater sensitivity to referent status information than comparisons to moderate referents.

#### Limitations and future directions

A limitation of the present study was that it did not explicitly confirm that participants compared themselves to the referent, but this possibility remains likely for two reasons. First, all

participants correctly recalled both their own score and the referent's score. Thus, all participants knew whether their score was higher or lower than the referent's score. Second, upward comparison participants evaluated themselves significantly more favorably when the referent ranked above average than below average, demonstrating that participants in these conditions used information about the referent to draw conclusions about themselves. Nonetheless, future study should explicitly ask participants whether or not they compared themselves to the referent to ensure that comparison processes occurred.

Another potential limitation was that social comparison information was always provided before referent status information among participants who received both feedback types. Future study is needed to test whether feedback order influences the effect of referent status information. Future research is also needed to examine whether the effect of referent status information depends upon the perceived importance of the performance task. It's possible that participants may be more sensitive to referent status when tasks are perceived as highly important or self-relevant. Lastly, although the present study suggests that people neglect referent status information, it should be noted that people are sensitive to other aspects of the referent, such as age. Along these lines, college students feel better about themselves after outperforming an adult than a 10-year old child (Webster et al., 2006). Future study is needed to further explore whether and when aspects of the referent moderate social comparison effects.

## **Conclusions**

In most competitions, there is a winner and a loser; however, winning and losing can mean different things depending on the status of the competitor. The present study suggests that people pay selective attention to referent status when it has favorable implications for the self. That is, losers evaluated themselves more favorably when the competitor was competent as opposed to incompetent, but winners evaluated themselves favorably even when the competitor was incompetent. Future studies should continue to explore the influence of referent status on self-evaluation, motivation, and behavior in competitive settings.

## **References**

Alicke, M.D., & Sedikides, C. (2009). Self-enhancement and self-protection: What they are and what they do. *European Review of Social Psychology*, 20, 1–48. <http://dx.doi.org/10.1080/10463280802613866>.

Alicke, M.D., Zell, E., & Guenther, C. L. (2013). Social self-analysis: Constructing, protecting, and enhancing the self. In J. M. Olson, & M. P. Zanna (Eds.), *Advances in experimental social psychology*, Vol. 48. (pp. 173–234). San Diego, CA: Academic Press.

Buckingham, J. T., & Alicke, M.D. (2002). The influence of individual versus aggregate social comparison and the presence of others on self-evaluations. *Journal of Personality and Social Psychology*, 83, 1117–1130. <http://dx.doi.org/10.1037/0022-3514.83.5.1117>.

Dunning, D. (2011). The Dunning–Kruger effect: On being ignorant of one's own ignorance. In J. M. Olson, & M. P. Zanna (Eds.), *Advances in experimental social psychology*, Vol 44. (pp. 247–296). San Diego, CA US: Academic Press. <http://dx.doi.org/10.1016/B978-0-12-385522-0.00005-6>.

Empirisoft (2010). MediaLab (Version 2010.2.19) [Software]. (Available from). <http://www.empirisoft.com/default.aspx>

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117–140. <http://dx.doi.org/10.1177/001872675400700202>.

Fiske, S. T. (2011). *Envy up, scorn down: How status divides us*. New York, NY US: Russell Sage Foundation

Grabe, S., Ward, L., & Hyde, J. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134, 460–476. <http://dx.doi.org/10.1037/0033-2909.134.3.460>.

Guimond, S. (2006). *Social comparison and social psychology: Understanding cognition, intergroup relations, and culture*. New York: Cambridge University Press.

Kassam, K. S., Morewedge, C. K., Gilbert, D. T., & Wilson, T. D. (2011). Winners love winning and losers love money. *Psychological Science*, 22, 602–606. <http://dx.doi.org/10.1177/0956797611405681>.

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. <http://dx.doi.org/10.1037/0022-3514.77.6.1121>.

Liem, G. D., Marsh, H. W., Martin, A. J., McInerney, D.M., & Yeung, A. S. (2013). The bigfish–little-pond effect and a national policy of within-school ability streaming: Alternative frames of reference. *American Educational Research Journal*, 50, 326–370. <http://dx.doi.org/10.3102/0002831212464511>.

Lockwood, P., & Kunda, Z. (1997). Superstars and me: Predicting the impact of role models on the self. *Journal of Personality and Social Psychology*, 73, 91–103. <http://dx.doi.org/10.1037/0022-3514.73.1.91>.

Markman, K. D., & McMullen, M. N. (2003). A reflection and evaluation model of comparative thinking. *Personality and Social Psychology Review*, 7, 244–267. [http://dx.doi.org/10.1207/S15327957PSPR0703\\_04](http://dx.doi.org/10.1207/S15327957PSPR0703_04).

Marsh, H. W. (1987). The big-fish–little-pond effect on academic self-concept. *Journal of Educational Psychology*, 79, 280–295. <http://dx.doi.org/10.1037/0022-0663.79.3.280>.

Mussweiler, T. (2003). Comparison processes in social judgement: Mechanisms and consequences.

*Psychological Review*, 110, 472–489. <http://dx.doi.org/10.1037/0033-295X.110.3.472>.

Mussweiler, T., Ruter, K., & Epstude, K. (2004). The ups and downs of social comparison: Mechanisms of assimilation and contrast. *Journal of Personality and Social Psychology*, 87, 832–844. <http://dx.doi.org/10.1037/0022-3514.87.6.832>.

Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives on Psychological Science*, 3, 102–116. <http://dx.doi.org/10.1111/j.1745-6916.2008.00068.x>.

Suls, J., & Wheeler, L. (2000). *Handbook of social comparison: Theory and research*. Dordrecht Netherlands: Kluwer Academic Publishers.

Taylor, S. E., & Lobel, M. (1989). Social comparison activity under threat: Downward evaluation and upward contacts. *Psychological Review*, 96, 569–575. <http://dx.doi.org/10.1037/0033-295X.96.4.569>.

Webster, J., Powell, C. J., Duvall, J., & Smith, R. H. (2006). Augmentation and discounting in affective reactions to upward and downward social comparisons. *Self and Identity*, 5, 267–286. <http://dx.doi.org/10.1080/15298860600683300>.

Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological Bulletin*, 106, 231–248. <http://dx.doi.org/10.1037/0033-2909.106.2.231>.

Zell, E., & Alicke, M.D. (2009). Contextual neglect, self-evaluation, and the frog-pond effect. *Journal of Personality and Social Psychology*, 97, 467–482. <http://dx.doi.org/10.1037/a0015453>.

Zell, E., & Alicke, M.D. (2010). The local dominance effect in self-evaluation: Evidence and explanations. *Personality and Social Psychology Review*, 14, 368–384. <http://dx.doi.org/10.1177/1088868310366144>.