

# Are People More Aggressive When They Are Worse Off or Better Off Than Others?

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## Abstract

Who is more likely to behave aggressively? Is it someone outperformed by others or is it someone who outperformed others? For safety reasons, it is important to know the answer to this question. In Studies 1 and 2, participants were told that they did worse or better than an ostensible partner on a first task. Then they aggressed against this partner on a second task using loud, painful noise blasts. Results showed that participants aggressed more against someone they outperformed (the loser) than against someone who outperformed them (the winner). However, these results do not indicate whether participants were especially aggressive against someone they outperformed, or whether they were especially nonaggressive against someone who outperformed them. Study 3 included a control group and showed it was the former. These studies suggest that one should pay particular attention to winners rather than losers, because winners tend to aggress against losers.

## Keywords

social comparison, aggression, upward, downward, loser, winner, power

Soy un perdedor, I'm a loser baby, so why don't you kill me?  
—Chorus of *Loser* (song by Beck)

In this opening quote, songwriter Beck seems to imply that he should be particularly vigilant when he is around people who outperform him (i.e., when he is the loser). Is Beck right? Who is more likely to be aggressive, someone worse off than the comparison target or someone better off? It is critical for safety reasons, and possibly survival, to know the answer to this question. Surprisingly, this question has not been tested experimentally. Theoretically, both answers are possible.

## The Case for Worse off People Being More Aggressive

People have a general drive to strive for a positive self-view and to feel competent (Steele, 1988; Tesser, 1988). Indeed, competence (i.e., the need to do something successfully or efficiently) is regarded as one of the three basic human needs in self-determination theory (Deci & Ryan, 2000). A similar idea can be found at the very core of the seminal theory of social comparison processes. Festinger (1954) hypothesized that people have a general drive upward, which makes them unsatisfied when outperformed by someone else (e.g., Huguet, Galvaing, Monteil, & Dumas, 1999; Muller, Atzeni, & Butera, 2004; Muller & Butera, 2007; Seta, 1982). Hence, the goal of feeling competent is hindered when people compare themselves with someone who is more competent than they are (see Muller &

Fayant, 2011, for a recent review). People might then become frustrated when someone outperforms them and therefore prevents them from feeling competent. And indeed, the aggression literature suggests people aggress against those who frustrate them by blocking their goal-directed behavior (Berkowitz, 1965). Thus, people might be more aggressive when they are worse off (i.e., upward comparison targets) rather than better off (i.e., downward comparison targets) than others.

## The Case for Better off People Being More Aggressive

In contrast, parallels that we will draw with the power literature lead to expect more aggression when people are better off than others. This literature has shown a link between social power and aggressive behaviors (e.g., Fast & Chen, 2009; Fast, Halevy, & Galinsky, 2012; Howard, Blumstein, & Schwartz, 1986; Keltner, Young, Heerey, Oemig, & Monarch, 1998). One

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explanation for this relationship is provided by the power approach theory (Keltner, Gruenfeld, & Anderson, 2003), which posits that elevated power activates a general behavioral approach system. This behavioral approach system has many features that can favor aggressive tendencies, among those, this system increases disinhibited behaviors, illusion of control, objectification of others, and risk taking (Anderson & Galinsky, 2006; Fast, Gruenfeld, & Sivanathan, 2009; Galinsky, Gruenfeld, & Magee, 2003; Gruenfeld, Inesi, Magee, & Galinsky, 2008), and this system decreases perspective taking ability (Galinsky, Magee, Inesi, & Gruenfeld, 2006).

Importantly for our concern, power is said to activate this behavioral approach system for two reasons (Keltner et al., 2003). First, the experience of power often comes with abundant rewards (e.g., money, good food, good health, physical comforts, and social resources, such as flattery, esteem, and praise). Second, the experience of power also comes with the impression that one can do whatever one wants without serious social consequences. This is of importance because being better off than others is very likely to be often associated with the same rewards as experiencing power. Hence, being better off than others might also activate a behavioral approach system, which could increase the likelihood of aggression.

There is another reason to predict better off people are more aggressive, and it has to do with features of the aggression target (i.e., worse off). People in meritocratic cultures often have negative reactions to so-called losers (Aronson, Willerman, & Floyd, 1966; Croizet, 2008). For example, one study showed that a bad-looking child was treated more harshly than a good-looking child (Berkowitz & Frodi, 1979). These authors argued that people associated with aversive events (like losing) become conditioned aggressive stimuli that can trigger aggressive behaviors. Accordingly, they suggest that we have an inclination to “strike at people having aversive characteristics” (Berkowitz & Frodi, 1979, p. 420). This inclination to strike at worse off others could be magnified by being better off if, as we suggested, it is associated with disinhibited behaviors. Thus, people might be more aggressive when they are better off than others. In other words, people might be more aggressive against downward comparison targets than against upward comparison targets. The two predictions based on two different theoretical perspectives were tested in three independent studies.

## Study 1

### Method

**Participants.** Participants were 103 American college students (62% females) who received course credit.

**Procedure.** Participants were paired with an ostensible partner of the same sex. They were told that the study dealt with competitive performance on two tasks. The first task was the illusory conjunction task (i.e., the illusion of seeing the target

when only its defining features are present). Participants saw patterns of simple shapes for 70 ms and they had to decide whether the dollar sign symbol was present or absent (see Muller et al., 2004). Because this task is extremely difficult, one can easily provide believable bogus performance feedback to participants (Muller & Butera, 2007). After 80 trials, participants received their score (always 65 out of 100), as well as their partner’s score, which was randomly determined to be either 50 out of 100 (downward comparison) or 80 out of 100 (upward comparison).

The second task was a competitive reaction time task (Taylor, 1967), which was used to measure aggression. Participants were told that they and their ostensible partner would have to press a button as fast as possible on each of the 25 trials and that whoever was slower would receive a blast of noise through headphones. In advance, participants set the level of noise their partners would receive on each trial. Noise levels ranged from 60 dB (*Level 1*) to 105 dB (*Level 10*, about the same volume as a smoke or fire alarm). A nonaggressive no noise option (*Level 0*) was also offered. Participants could also determine how long their “partner” suffered by how long they set the duration button (from 0 s to 2.5 s). The “partner” set random intensity and duration levels across the 25 trials. Basically, with the ethical limits of the laboratory, participants controlled a weapon that they could use to blast their partner with loud noise if they won the reaction time competition. Research has consistently shown that this is a valid and reliable measure of aggression in laboratory settings (e.g., Bernstein, Richardson, & Hammock, 1987; Giancola & Zeichner, 1995).

A debriefing followed, which included a probe for suspicion. No participants expressed suspicion regarding the purpose of the study.

## Results and Discussion

Noise intensity and duration set by participants for their ostensible partners were highly correlated,  $r = .69$ ,  $p < .01$ , and were therefore standardized and averaged to form a more reliable aggression measure. As in our previous research (e.g., Bushman, Baumeister, & Phillips, 2001), we used only Trial 1, because after Trial 1 aggression converged on what participants believed their partner had done (i.e., tit-for-tat responding).

A one-way analysis of variance (ANOVA; downward vs. upward comparison target) revealed that participants were more aggressive against the downward comparison target than against the upward comparison target, ( $M_{\text{down}} = 0.17$ ,  $SD_{\text{down}} = 0.99$ ;  $M_{\text{upw}} = -0.24$ ,  $SD_{\text{upw}} = 0.83$ ),  $F(1, 101) = 5.12$ ,  $p < .026$ ,  $d = 0.45$ . Hence, in this study, people were more aggressive when they were better off rather than worse off than others.

One potential limitation of Study 1 is that participants might have inferred that someone who was good on the first task would also be good on the second task. Thus, participants who competed against an upward target may have been afraid to behave aggressively because they worried that their ostensible partner would win a lot of trials and repeatedly punish

them with painful noise blasts on the second task. Study 2 overcomes this limitation.

## Study 2

### Method

**Participants.** Participants were 34 French college students (53% females) who received 10€ (about \$13) for their participation.

**Procedure.** The procedure for Study 2 was the same as for Study 1, except that we explained that the two tasks were testing different capacities (i.e., visual perception and motor responsiveness) that tapped different hemispheric areas of the brain. Moreover, participants were explicitly told that performance on the two tasks was unrelated and that people performing well on Task 1 do not necessarily perform well on Task 2. A debriefing and probe for suspicion followed. No participants expressed suspicion regarding the purpose of the study. All participants remembered that performance on the two tasks was unrelated.

## Results and Discussion

We used the same aggression measure used in Study 1 (i.e., we standardized and averaged noise intensity and duration for Trial 1 of the competitive reaction time task). Once again, participants were more aggressive against downward comparison targets than against upward targets, ( $M_{\text{down}} = 0.36$ ,  $SD_{\text{down}} = 0.96$ ;  $M_{\text{upw}} = -0.32$ ,  $SD_{\text{upw}} = 0.71$ ),  $F(1, 32) = 5.68$ ,  $p < .024$ ,  $d = 0.84$ .

As in Study 1, people aggressed more when they were better off rather than worse off than others, even though there was no reason to believe that winning on the first task was related to winning on the second task.

Based on Studies 1 and 2, however, we are still unsure whether participants aggressed more against downward comparison targets or less against upward comparison targets. We deal with these concerns in Study 3 by including a control group. To increase the generalizability of our findings, we also use a different aggression measure.

## Study 3

### Method

**Participants.** Participants were 72 French college students (61% females) who received 10€ (about \$13) for their participation.

**Procedure.** Participants were told the researchers were studying impression formation, and they would form an impression of an ostensible partner of the same sex based on some tasks they would do together. First, participants completed a "Food Preference Form," indicating how much they liked certain types of food (dairy food, spicy food, salty food, seafood, etc.) on a 21-point scale (1 = *strongly dislike* to 21 = *strongly like*).

They were told they would later exchange the Food Preference forms with their partner, presumably to help them form an impression of the types of foods their "partner" liked.

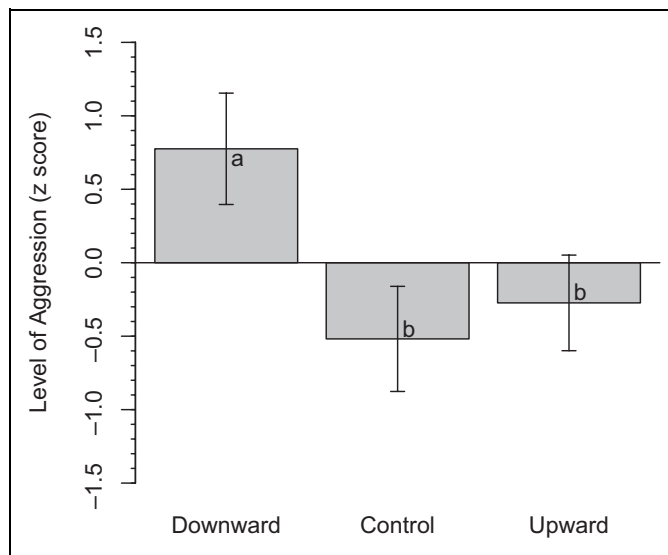
They were then asked to write an essay about a particularly nice day in their life. They were told they would later exchange essays with their partner, presumably to form an impression of their partner. However, the "partner's" evaluation of the essay was actually used to anger participants (e.g., Bushman & Baumeister, 1998).

Next, participants completed the illusory conjunction task (as in Studies 1 and 2). Participants were told this nonverbal measure of intelligence would help them form an impression of their partner. However, the task was actually used to manipulate social comparison feedback. We used the same upward and downward feedback as in Studies 1 and 2, but added a no feedback control condition. Participants in the control condition were told that their partner's feedback could not be provided due to a computer error (their own score was again 65%).

Next, the experimenter returned with the "partner's" evaluation of their essay, in which participants received negative ratings on organization, writing style, persuasiveness of arguments, as well as the handwritten comment "Poor writing, middle school level." After that, the experimenter gave participants their partner's Food Preference Form, so they could see what types of food their "partner" liked. For all participants, the partner indicated a strong dislike (rating = 3) of spicy and salty foods. To measure aggression, we used an adapted version of the hot sauce paradigm (Lieberman, Solomon, Greenberg, & McGregor, 1999). Participants were (presumably) randomly assigned to drink a sweet beverage, whereas their partner was randomly assigned to drink a tomato juice beverage. Participants were told they could add Tabasco sauce and salt to their partner's beverage if they wanted to. Before preparing the partner's beverage, participants first tested a small sample of tomato juice with salt and Tabasco sauce so they would know what it tasted like. Next, participants tasted and rated the beverage prepared by their "partner" (a glass of water sweetened with glucose syrup). A debriefing followed, which included a probe for suspicion. No participants expressed suspicion regarding the purpose of the study.

## Results and Discussion

The weight of Tabasco sauce and salt (in milligrams) participants added to their partner's drink were highly correlated,  $r = .63$ ,  $p < .01$  and were therefore log-transformed (their distributions were skewed), standardized, and averaged to form a more reliable aggression measure. We submitted the data to a one-way ANOVA (downward, control, and upward) with two orthogonal contrasts: the first one comparing the downward condition with the other two conditions and the second one comparing the upward condition with the control condition. As expected, aggression levels differed across conditions,  $F(2, 68) = 3.81$ ,  $p < .03$ . Contrasts showed that participants were more aggressive against the downward comparison target than against the mean of the other two conditions ( $M_{\text{down}} = 0.78$ ,



**Figure 1.** Level of aggression as a function of social comparison conditions. Error bars represent standard errors. Means that do not share the same subscript are significantly different at  $p < .05$ .

$SD_{\text{down}} = 1.89$ ;  $M_{\text{cont}} = -0.52$ ,  $SD_{\text{cont}} = 1.72$ ;  $M_{\text{upw}} = -0.27$ ,  $SD_{\text{upw}} = 1.56$ ,  $F(1, 68) = 7.39$ ,  $p < .01$ ,  $d = 0.66$  (see Figure 1). There was no reliable difference between the control and the upward conditions,  $F(1, 68) < 1$ .

Study 3 not only replicated Studies 1 and 2 but also extended them in two important ways. First, Study 3 included a control condition that confirmed that participants were particularly aggressive against downward comparison targets and not particularly nonaggressive against upward comparison targets. Second, we obtained similar results using a different aggression measure, which increases the generalizability of our findings.

## General Discussion

These three studies show experimentally, for the first time, that people are more aggressive against downward comparison targets (i.e., losers) than against upward comparison targets (i.e., winners). In other words, people are more aggressive when they are better off than the comparison target. Hence, it seems that, at least in a comparative setting, people should keep an eye on those who outperform them, instead of those they outperform. These somewhat paradoxical findings are reminiscent of studies that rejected the commonly held belief that aggressive people suffer from low self-esteem (e.g., Bushman & Baumeister, 1998; Bushman et al., 2009). Moreover, these results were replicated with both American and French samples and with two different aggression measures, demonstrating this effect is robust.

Given the parallels we draw between being better off than others and being more powerful, our findings are consistent with power theories that propose elevated power activates the behavioral approach system (Galinsky et al., 2003; Keltner et al., 2003). Hence, as being powerful sometimes does, being

better off than others can increase aggression tendencies. Of course, as aggression is only one of the behavioral approach system manifestations, more research will be needed to confirm that being better off does activate this system. It is worth noting, however, that other studies have already shown that being better off than a comparison target induces a challenge state (Mendes, Blascovich, Major, & Seery, 2001), a state very similar in its manifestations as the behavioral approach system (e.g., positive affects, reduced anxiety, and physiological pattern).

An apparent difference between the experience of power and a setting like ours has to do with the fact that powerful people often have a direct structural influence on less powerful people. Power researchers, however, have argued that such direct structural influences are not necessary, as power is best conceived as a psychological state that activates the behavioral approach system (e.g., Galinsky et al., 2003). The same might be true for downward social comparisons.

The power literature also provides insights for the boundary conditions to our effect, because recent work showed that power alone is not always sufficient to increase aggression tendencies. For instance, studies revealed that a form of threat to the powerful (e.g., having power without feeling competent or having power without having high status) might be needed for the behavioral approach system to favor aggression (Fast & Chen, 2009; Fast et al., 2012). In a similar fashion, it might be that being better off than the comparison target is not sufficient in itself to induce aggression. Maybe our effects also need the extra push provided by the aversive characteristics of the comparison target (i.e., that fact that the target is a “loser”). In other words, after learning that they were better off than the comparison target, maybe our participants would not have been aggressive with someone else who was not a “loser.” Our research compared losers and winners, but we did not have a condition where, after winning, participants were given the opportunity to aggress someone who was not involved in the first comparison. Future work will be needed to address this question.

Future work could also address an alternative mechanism, namely perceived similarity with the comparison target. On one hand, previous research has shown that downward comparison targets are perceived as more dissimilar than upward comparison targets (Huguet et al., 2009). On the other hand, previous research has shown that people are more aggressive against dissimilar others (e.g., Kaufmann, 1965; Shuntich, 1976). Hence, it could be that our participants aggressed more in the downward comparison condition because they felt more dissimilar with the comparison target. Whatever the mechanism, the question we wanted to address was who is more likely to behave aggressively against a comparison target, someone who was outperformed by the target, or someone who outperforms the target? Our conclusion remains the latter one, no matter what the underlying mechanism is.

## Conclusion

Losers are often the brunt of ridicule and jokes, and not just on late night comedy shows either. In society, it seems like the



“winner takes all.” In his song, Beck even suggests that people behave in an aggressive and violent way against losers. These three studies show that Beck’s intuition might be right. Watch out when you are the loser.

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### Authors’ Note

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