

## Negativity bias

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The affect system has been sculpted in complex environments where the opportunity for reward and the threat of punishment often go hand in hand. In the savanna, for instance, prey animals must come to drink at the same water holes where their predators come to dine. Errors in such situations can be costly. Whereas avoidance can leave animals without water, approach can expose them to predators. Noting that failing to secure even critical resources is less harmful in the long run than debilitating or fatal injury, Cacioppo and Berntson (1994) contended that a *negativity bias* evolved to promote survival. Consistent with this proposition, researchers have uncovered negativity biases in a wide variety of domains.

Extensive reviews of research on the negativity bias have been provided by Baumeister *et al.* (2001) and Rozin and Royzman (2001). In the domain of relationships, Baumeister *et al.* note that negative acts have more impact on relationship quality than positive acts. Thus, for instance, it may take as many as five compliments to undo the damage done by a single insult. They also review evidence that levels of distress among spouses, but not affection, predict subsequent divorce. Rozin and Royzman note the asymmetry between purification and contamination. Most individuals, for instance, refuse to eat food touched but once by cockroaches or any number of other any number of aversive objects. Yet there exists no “anticockroach,” no object that can purify aversive objects by coming into contact with them. Similarly, Rozin and Royzman note that whereas negative attitudes that are resistant to extinction can be acquired through single-trial learning, positive attitudes take much longer to develop.

People's conscious choices are also more sensitive to negative than positive information. Prospect theory (Kahneman and Tversky 1979), the most influential descriptive model of decision making, features a value function that is steeper for losses than gains. Consistent with prospect theory, decision making tends to be characterized by loss aversion. For instance, individuals are only indifferent to a prospect involving a 50% chance of losing \$50 if it also affords a 50% of winning roughly \$100. Loss aversion has also been invoked to explain the endowment effect (e.g., Rozin and Royzman 2001), whereby individuals who have been endowed with, for instance, a mug demand far more money to part with the mug than individuals who have not been endowed with a mug are willing to pay for one.

A great deal of evidence indicates that the negativity bias emerges, at least in part, because negative stimuli garner more attention than positive stimuli. In an event-related potential (i.e., brainwave) study, for instance, Smith *et al.* (2002) measured the amplitude of the P1 elicited by pleasant and unpleasant pictures. The P1 is a positive-going brainwave originating within 120 ms of stimulus onset that reflects neural activity in the extrastriate area of the visual cortex. Smith *et al.* found that unpleasant negative pictures elicit larger P1s than pleasant pictures, indicating that negative stimuli garner greater attention than positive stimuli extremely early in the evaluative process. Indeed, the P1 arises prior to stimulus identification, so these results indicate that negative stimuli receive preferential processing before they have even been identified.

The findings reviewed here represent a mere fraction of the field and laboratory studies that have demonstrated that negativity has greater effect on affect, cognition, and behavior than does positivity. Indeed, though human behavior is nuanced and subject to any number of moderating factors, the negativity bias appears to represent a fundamental psychological law (Baumeister *et al.* 2001) As Baumeister *et al.* conclude, "bad is stronger than good" (p. 323).

## References

Baumeister RF Bratslavsky E Finkenauer C and Vohs K D (2001). Bad is stronger than good. *Review of General Psychology*, **5**, 323-370.

Cacioppo JT and Berntson GG (1994). Relationship between attitudes and evaluative space : A critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin*, **115**, 401-423.

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Rozin P and Royzman EB. (2001). Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review*, **5**, 296-320.

Smith NK Cacioppo JT Larsen JT and Chartrand TL. (2003). May I have your attention, please: Electrocortical responses to positive and negative stimuli. *Neuropsychologia*, **41**, 171-183.

State-of-the-art readings

Baumeister RF Bratslavsky E Finkenauer C and Vohs K D (2001). Bad is stronger than good.  
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