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# Recalibrating positive and negative weighting tendencies in attitude generalization

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## HIGHLIGHTS

- We recalibrated individuals to weight positive and negative valence more equally during attitude generalization.
- Recalibration influenced various subsequent judgments involving valence weighting.
- People with an initial negative weighting bias became more positive in their judgments.
- Individuals who began with an initial positive bias showed the opposite trend.

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## ABSTRACT

Individual differences in the weighting of positive versus negative information when generalizing attitudes towards novel objects predict a variety of assessments that involve the integration of valence information (Pietri, Fazio, & Shook, 2013). The goal of the current research was to manipulate valence weighting in attitude generalization to demonstrate its causal impact on various judgments and behaviors. In four experiments, participants first played BeanFest—a game in which they approached/avoided novel stimuli (beans) varying in shape and speckles, in order to increase and not decrease their points (Fazio et al., 2004). Following the game, participants classified game beans, and novel ones that varied in resemblance to the game beans as either positive or negative. In the recalibration condition, participants were told whether each classification was or was not correct. Thus, they received feedback regarding the appropriate valence weighting of resemblance to a known positive versus a known negative. In Experiment 1, this recalibration influenced individuals' attitude generalizations regarding other (non-bean) novel objects. We then examined if recalibration would produce far-transferring effects by influencing interpretations of ambiguous situations (Experiment 2), risk assessments (Experiment 3), and finally risk-taking behavior (Experiment 4). Across the four experiments, the recalibration procedure led participants who were initially relatively cautious to be more positive when making these various judgments, whereas people who exhibited an initial risky bias became more negative as a function of recalibration.



## Introduction

People are often faced with situations that involve understanding both positive and negative information in order to arrive at an appropriate reaction or judgment. When making such assessments, individuals must integrate the positives and negatives in order to respond. However, scientists in many areas of psychology have found that individuals often do not give equal weight to positive and negative information. In general, people tend to emphasize negative information more than positive (see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001, for reviews). Beyond average tendencies, personality researchers have posited that certain individuals are more sensitive to positive stimuli or rewards, whereas others are more affected by negatives or punishments (e.g., Elliot & Thrash, 2010; Gray, 1987; Idson, Liberman, & Higgins, 2000). Furthermore, individuals with such emotional disorders as anxiety and depression are often characterized by cognitive patterns and distortions that involve an overemphasis on the negative (Abramson, Metalsky, & Alloy, 1989; Riskind, 1997).

These findings represent just a summary sampling of what is a vast and diverse literature demonstrating the variability in how individuals understand (and are affected by) positive versus negative information. Recently, researchers have aimed to measure how individuals weight purely positive and negative information when making decisions or judgments that involve some assessment of valence (Pietri, Fazio, & Shook, 2013). Importantly, one goal of this measurement approach was to avoid domain specificity so as to capture how individuals

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understand and integrate positive versus negative information across a variety of domains. The measure of valence bias focused specifically on differences in how individuals weight positive versus negative when generalizing their attitudes towards novel objects. Although the resulting assessment was predictive of judgments across many domains, the research was correlational in nature and, hence, did not demonstrate the causal impact of attitude generalization tendencies on judgments. With this limitation in mind, the current research aimed to modify individuals' valence weighting tendencies by training them to weight positive and negative information more equally during an attitude generalization task. Specifically, our goal was to train individuals who weight negative information strongly to give more weight to positive information, and to train individuals who overweigh positives to weigh negatives more strongly. An experimental manipulation of this sort would serve to show that this valence weighting tendency has a causal influence on subsequent judgments and reactions.

To elucidate the rationale underlying the series of experiments that we plan to report, we first will summarize our previous research findings concerning individual differences in valence weighting while engaged in attitude generalization. We then will discuss prior research that has successfully manipulated valence biases in attention and, hence, provides reason to believe that it may be possible to recalibrate individuals' valence weighting tendencies. Finally, we will describe the paradigm by which we propose to modify individuals' valence weighting biases.

## Performance-based measure of valence weighting in attitude generalization

To articulate our motivation for manipulating valence weighting, we must first explain how and why individual differences in attitude generalization tendencies have been assessed in past research. The approach rested on the presumption that when individuals judge a novel or hypothetical situation they have to weigh how much it resembles a known positive versus a known negative. Thus, individuals are essentially engaging in attitude generalization whenever they are judging a novel situation. They are generalizing from their past positive and negative experiences with similar attitude objects. When doing so, some individuals may generalize their negative attitudes more strongly than their positive attitudes and, hence, give more weight to the negative. As a result, they are likely to form a negative evaluation of the situation. Others may give more weight to the positive and form a more positive evaluation. For this reason, an assessment of how individuals generalize their pre-established attitudes to similar but novel attitude objects can serve as an overall index of how people tend to weigh positive versus negative information when making any judgment that involves integrating valence information (Pietri, Fazio, & Shook, 2012; Pietri et al., 2013).

More specifically, past research has measured such tendencies in attitude generalization through a paradigm called BeanFest. BeanFest was originally created for the express purpose of examining how individuals form and generalize their attitudes towards novel objects (Fazio, Eiser, & Shook, 2004). In BeanFest, participants played a computer game in which their goal was to earn (and avoid losing) points by making appropriate decisions about which stimuli to select. Participants were presented with "beans" that varied within a ten by ten matrix from circular to oblong in shape and from having one to ten speckles. However, during the game, participants were presented with only a subset of the beans from different regions of the matrix (e.g., circular beans with few speckles, oval beans with few speckles, oblong beans with many speckles, etc.). Some types of beans would increase points, whereas others would decrease points, if they were selected. Participants were presented with one bean at a time, and they had to decide whether to select the bean or not. Following the BeanFest game, participants completed a test phase in which they were shown all 100 beans from the matrix, and indicated whether they believed a bean would have been good or bad during the game (i.e., would have increased or decreased their points, respectively). Because participants were presented with all 100 beans, one could assess both how participants formed attitudes towards the game beans and how these attitudes generalized towards the novel beans not seen during the game.

Fazio et al. (2004) observed valence asymmetries both in attitude learning and attitude generalization. The latter is pertinent to the current research. The attitudes that participants developed towards the game beans generalized to the novel beans. Beans that more closely resembled known positives (i.e., those with a Euclidean distance in the $10 \times 10$ matrix closer to positive game beans) were likely to be considered positive, and those that more closely resembled known negatives were likely to be considered negative. However, negative attitudes generalized more strongly than positive attitudes did. In particular, novel beans with a location in the matrix equidistant from positive and negative game beans were likely to be classified as negative. Thus, participants weighted resemblance to a known negative more heavily than resemblance to a positive (see also Shook, Fazio, & Eiser, 2007).

Although Fazio et al. (2004) observed this negativity bias in attitude generalization on average, naturally there was variability in the extent to which individuals displayed this asymmetry. Some individuals weighted resemblance to a negative much more strongly than resemblance to a positive when generalizing their attitudes, more so than was average. Others weighted resemblance to a positive equal to or more than resemblance to a negative. It is this variability that Pietri et al. (2013) proposed as an individual difference measure of valence weighting in generalizing positives versus negatives. As will be summarized shortly, Pietri et al. (2013) found this valence *weighting bias* in attitude generalization to be predictive of a variety of judgments that required integration of positive and negative information. They calculated the weighting bias as the average response to novel beans ($+1$ for positive, $-1$ for negative), while statistically controlling for the correct learning of positive and negative game beans. Specifically, Pietri el al. predicted average response to novel beans from a regression equation including the proportion of positive and negative game beans correctly classified. They then employed the deviation from the predicted value (i.e., the residual) as the estimate of an individual's weighting bias. More negative (positive) values indicate the tendency to classify more novel beans as negative (positive) than is to be expected from an individual's pattern of learning.

Because the attitudes towards the game beans were created experimentally and the stimuli were ones with which individuals had no prior contact, the measure captured a very pure estimation of individuals' valence weighting proclivities—one that is free of the various confounds that are typically associated with negative valence, such as distinctiveness and diagnosticity (e.g., Kanouse & Hanson, 1972; Skowronski & Carlston, 1989).

### *Correlates of valence weighting in attitude generalization*

The valence weighting that individuals exhibited with respect to their generalization of attitudes from game beans to novel beans related to their assessments of a variety of hypothetical or novel situations. In a series of studies, Pietri et al. (2013) found that the weighting bias in attitude generalization correlated with sensitivity to the possibility of rejection when considering hypothetical interpersonal events, assessment of ambiguously threatening situations, fear of entering new situations, and risk tendencies involving both hypothetical and actual behaviors. Individuals who generalized negative attitudes more strongly than positive expressed more concern about the possibility of interpersonal rejection, judged ambiguous situations as potentially more threatening, and expressed hesitations about entering novel situations or meeting strangers. Those who generalized positive attitudes relatively more strongly exhibited greater risk tolerance and riskier behavior. Furthermore, in another pair of studies, Pietri et al. (2012) found the weighting bias predicted emotional reactivity to an actual experienced stressful event. Those individuals characterized by a more negative weighting bias in attitude generalization reported being more upset by