

Emotion and the Self-Serving Bias

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Abstract The influence of specific emotions (guilt and revulsion) on the self-serving bias was investigated. Participants were recruited from an undergraduate population. There were 360 participants (132 male) with a mean age of 19.41 years. Participants took part in an online study, which involved taking a ten-question test, completing an emotional induction, receiving test feedback, and making an attribution for test performance. Results revealed a significant effect of feedback ($p < 0.001$) indicating the self-serving bias. Results also revealed a significant effect of emotion over this self-serving bias. Both guilty and revolted participants made less self-enhancing attributions for success ($p = 0.04$), and less self-protecting attributions for failure ($p = 0.006$). The hypothesis that the valence of specific emotions influences the self-serving bias was supported. No support was found for the hypothesis that the appraisal dimensions of specific emotions influence the self-serving bias. Theoretical and practical implications are discussed.

Keywords Self-serving bias · Judgment · Emotion · Attribution

The self-serving bias is revealed in the behavioral tendency to take credit for personal success but to deny responsibility for personal failure. First credited to Heider (1958), the bias is a psychological strategy used to protect self-esteem (Sedikides and Strube 1995). That is, individuals are motivated to enhance their self-esteem by making internal attributions for positive outcomes, and motivated to protect their self-esteem by making external attributions for negative outcomes.

The self-serving bias has been observed in numerous areas of human life. It has been found that employees make self-serving attributions for their performances in the work-place (Imai 1994), that divorced people usually blame their spouses for the break up (Gray and Silver 1990), that alpine skiers make more internal attributions when they do well than when they do badly (Riess and Taylor 1984), and that

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individuals in relationally-distant dyads take more credit for mutual successes than for mutual failures (Sedikides et al. 1998).

As the self-serving bias is a self-esteem protection strategy, the bias is modified by the degree to which individuals feel that their self-concepts are being threatened. Many factors influence this perception of self-threat including: the importance of the task being performed, the difficulty of the task being performed, a person's expectancy of success or failure, and the competitiveness of the individual (Campbell and Sedikides 1999).

Another important variable that has been shown to moderate the self-serving bias is affect. Some studies have suggested that individuals experiencing positive affect are more susceptible to the self-serving bias than individuals experiencing negative affect (for example, Baumgardner and Arkin 1988). The self-threat model explains this pattern of results by positing that, because positive affect is linked to a positive self-concept and high self-esteem (Brockner 1983; Sedikides 1992), individuals experiencing positive affect have more self-esteem to be threatened than individuals experiencing negative affect. Alternative explanations for why the valence of an emotion might influence the self-serving bias include the "affect priming" principle (Bower 1981), and the "affect as information" heuristic (Finucane et al. 2000). The affect priming principle states that emotion can prime the encoding, retrieval and use of information from memory when making judgments. Thus, people experiencing positive affect retrieve and use positive memories when making attributions causing these attributions to be optimistic, while people experiencing negative affect retrieve and use negative memories when making attributions causing these attributions to be pessimistic. The affect as information approach states that, instead of using cognitively intensive processing to make judgments about events, people simply rely on their feelings. Hence, people experiencing positive affect assume that the events under consideration must also be positive causing them to make optimistic attributions, while people experiencing negative affect assume that the events under consideration must also be negative causing them to make pessimistic attributions.

In recent years, an alternative explanation for how emotion exerts its influence over cognition has arisen. The appraisal tendency model (Lerner and Keltner 2000) does not look at the *general* influence of positive or negative affect, instead it outlines the mechanisms by which *specific* emotions exert their influence over judgments and decision-making. The framework consists of three elements.

The first element of the framework describes how the cognitive appraisal (Smith and Ellsworth 1985) of a situation produces emotions. It describes how emotional states are determined by individuals' perceptions of their relationship to the environment. This relationship is said to be assessed along the six dimensions of: certainty (about what is happening), pleasantness (of the situation), anticipated effort (required by the situation), attention (elicited by situation), control (of either person or circumstance over the situation), and responsibility (of either person or circumstance in producing the situation). Thus, an individual suffering bereavement might perceive death with moderate certainty, low pleasantness, moderate anticipated effort, moderate attention, circumstantial control, and circumstantial responsibility, thus producing the emotion of sadness.

The second element of the appraisal tendency framework describes the function that elicited emotions serve. That is, emotion triggers a particular pattern of

responses which help people to deal with emotion-eliciting problems or opportunities (Levenson 1994; Oatley and Johnson-Laird 1996). The pattern of responses produced by emotions to deal with situations include physiological changes, behavioral changes and, of particular importance to judgment research, cognitive changes.

The third element of the appraisal tendency framework describes how such cognitive response patterns are applied to judgments made about the emotion-eliciting situation (integral judgments). Moreover, the framework also describes how cognitive response patterns elicited by one's situation can be so powerful that they may also be applied to judgments made about completely different situations (incidental judgments). Thus, a stimulus commanding a lot of attention will produce an emotional response characterized by high attention. This will bring high levels of attention to any judgment aimed at dealing with the original situation, but may also cause high levels of attention to carry over into judgments of completely unrelated matters.

For example, as part of a 2001 paper, Lerner and Keltner (2001) induced participants to experience either anger or fear. (The emotions of anger and fear have identical appraisal dimensions except that anger is high in certainty and perceives personal control, while fear is low in certainty and perceives circumstantial control). Participants induced to experience anger became optimistic when making incidental judgments about the likelihood of future events happening to them (they felt certain and in control of these future events), while participants induced to experience fear became pessimistic when making incidental judgments about the likelihood of future events happening to them (they felt uncertain and not in control of these future events). Thus, it was not the valence of the emotions that influenced participants' judgments (anger and fear are both negative states of feeling) it was the underlying appraisal dimensions of the emotions that influenced their judgments.

The self-serving bias occurs when individuals make internal attributions for success (they perceive personal responsibility for that success) and external attributions for failure (they perceive other/ circumstantial responsibility for that failure). The emotions of guilt and disgust are both negative in terms of valence. They are also identical along five of the six underlying appraisal dimensions (moderate certainty, low pleasantness, moderate anticipated effort, moderate attention, and low human control). However, while guilt is underpinned by perceptions of self responsibility for events, disgust is underpinned by perceptions of other responsibility for events (Smith and Ellsworth 1985). In everyday language the words "guilt" and "disgust" are often used synonymously. For example, people might say that they feel guilty about lying or they might say that they are disgusted with themselves for lying. In both cases they mean exactly the same thing. For the purposes of this experiment, in order to disambiguate the terms more fully, the word "disgust" was replaced with the word "revulsion" (as people are very rarely revolted with themselves).

The current experiment was designed to investigate the influence of specific emotions (guilt and disgust/ revulsion) on the self-serving bias. When considering this influence, the valence and appraisal tendency models make contradictory predictions. The valence model predicts that, as they are both negative states of feeling, the emotions of guilt and revulsion will prompt people to become more

pessimistic in their judgments. That is, people experiencing guilt or experiencing revulsion will become less likely to succumb to the self-serving bias (they will be less likely to self-enhance after success and less likely to self-protect after failure). However, the appraisal tendency model predicts that individuals experiencing guilt will perceive personal responsibility for events, hence they will be more likely to self-enhance after success and less likely to self-protect after failure, while individuals experiencing revulsion will perceive other/ circumstantial responsibility for events, hence they will be less likely to self-enhance after success and more likely to self-protect after failure.

Method

Participants

Undergraduate students ($N=379$) were recruited to participate in the study in exchange for course extra credit. The majority of participants were freshmen studying the social sciences who came from predominantly Northern European ancestry. Of those recruited, 19 did not complete the experiment fully, and were excluded from all further analysis. The remaining 360 participants consisted of 132 males and 228 females ranging in age between 18 and 36 years ($M=19.41$, $SD=2.02$). All participants were treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychologists Association 1992).

Materials

The study used a web-based, computer program. The program consisted of separate screens of text guiding participants through the study.

For all participants the program consisted of eight stages. The content of these eight stages varied according to the condition to which participants were assigned. The program began (stage one) by obtaining participants’ consent. Stage two of the program collected information about participants’ age and sex, and issued them with the following instructions:

You are about to take part in a computer-based, judgment-making study. There are three parts to the study: taking a short test, writing some brief descriptive passages, and making a judgment.

Stage three of the program consisted of a ten-question, multiple-choice quiz. The quiz contained questions on a variety of topics including: popular cultural (for example, “Who played the lead role in the movie ‘Titanic’?”), general knowledge (for example, “Which is the largest desert in the world?”), math skills (for example, “Which number comes next in the sequence 4–8–12–16–?”), and language skills (for example, “Which of the words ‘apple’, ‘marmalade’, ‘orange’, and ‘pear’ does not belong?”).

Stage four of the program randomly assigned participants to a condition based on the current minutes passed the hour. Stage five of the simulation then induced emotion using a technique adapted from Keltner et al. (1993). In one condition

participants were induced to experience guilt. A second condition acted as a control, and in a third condition participants were induced to experience revulsion. The screen in the program read:

Please answer the following questions as truthfully as possible providing as much detail as you can:

A. Briefly describe three things that you have done that make you feel guilty (contrite or ashamed)/ that you might find in an office/ that other people do that make you feel revolted (sickened or nauseated).

B. Describe in more detail the one situation that makes you, or has made you, most guilty /the one thing that is used most in an office/ the one situation that makes you, or has made you, most revolted. Write your description so that someone reading it might even feel guilty/ might find it easy to visualize this thing/ might even feel revolted themselves. Please write at least 150 words.

The mood induction screen displayed a graphical image containing the word “Guilt” (accompanied by a picture of a gavel), “Office” (accompanied by a picture of an office) or “Revulsion” (accompanied by a cartoon picture of a person being sick) depending on condition. The appropriate graphical image was then displayed on each subsequent screen for each condition. The graphical images served to maintain the induced emotion throughout the procedure.

Stage six of the program provided participants with either (fictitious) positive, (fictitious) negative, or no feedback about their performance on the test, and asked them to make a judgment about the cause of this performance. The screen read:

Positive/ Negative feedback: *“The answers that you gave in the ten-question test have now been processed. You did much better/ much worse than the average participant. This could be because you have more/ less ability than the typical participant (perhaps you have a good/ bad memory or high/ low intelligence), or it might have nothing to do with ability at all (perhaps the test is poorly designed).”*

Please indicate on the scale below how much you agree with the following statement. ‘I did well/ badly on the test because of my abilities’.”

No feedback: *“The answers that you gave in the ten-question test are about to be processed. You will be told exactly how well you performed compared to other participants. This level of performance might have something to do with your abilities (for example your memory skills or level of intelligence), or it might have nothing to do with ability at all (perhaps the test is poorly designed).”*

Please indicate on the scale below how much you agree with the following statement. ‘My performance on the test was due to my abilities’.”

Stage seven of the program acted as a manipulation check. The screen read:

1. *Using the scale below, please indicate how guilty you feel right now?*
2. *Using the scale below, please indicate how revolted you feel right now?*

Participants read a full debriefing screen in stage eight of the program.

Design and Procedure

A between-subjects design was used. The first independent variable was induced emotion. Induced emotion was divided into three levels: guilt, control, and revulsion. The second independent variable was test feedback. Test feedback was divided into three levels: above average, no feedback, and below average. All nine conditions had equal group sizes of 40 participants. The first dependent variable was performance attribution. Performance attribution was measured on an 11-point scale ranging from zero (strong internal attribution), with participants totally agreeing that their test performance was due to their ability to ten (strong external attribution), with participants totally disagreeing that their performance was due to their ability. The second dependent variable was participants' experienced level of guilt. Guilt was measured on an 11-point scale ranging from zero (no guilt) to ten (high guilt). The third dependent variable was participants' experienced level of revulsion. Revulsion was measured on an 11-point scale ranging from zero (no revulsion) to ten (high revulsion).

Results

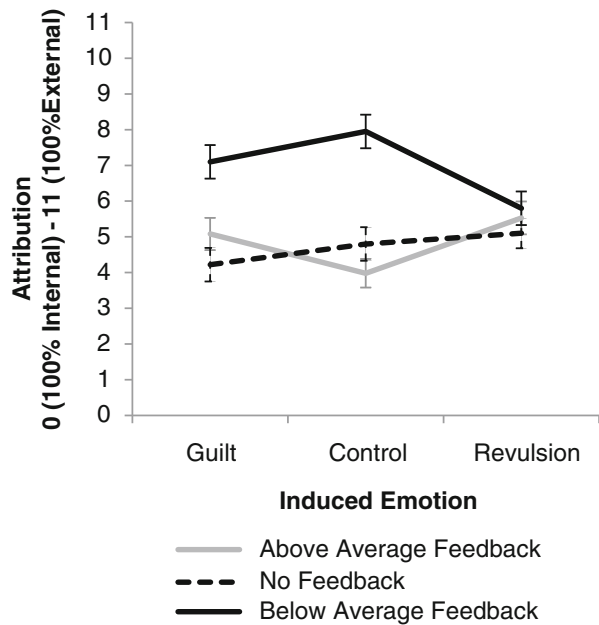
In the above average feedback condition the performance attribution levels were 5.08 ($SD=2.86$) for guilt, 3.98 ($SD=2.50$) for control, and 5.53 ($SD=2.94$) for revulsion. In the no feedback condition the performance attribution levels were 4.22 ($SD=2.97$) for guilt, 4.80 ($SD=2.97$) for control, and 5.10 ($SD=2.64$) for revulsion. In the below average feedback condition the performance attribution levels were 7.10 ($SD=2.99$) for guilt, 7.95 ($SD=2.94$) for control, and 5.80 ($SD=2.98$) for revulsion. These means are displayed in Fig. 1.

The data were analyzed, initially, using a two-way ANOVA. Results revealed a significant main effect of test feedback $F(2,351)=22.90$, $p<0.001$, $\eta^2=0.026$, no significant effect of emotion $F(2,351)=0.05$, $p=0.948$, and a significant interaction effect $F(4,351)=4.85$, $p=0.001$, $\eta^2=0.011$. A planned comparison (repeated contrast) revealed a significant difference between the below average feedback group and the no feedback and above average feedback groups ($p<0.001$), but no significant difference between the no feedback and above average feedback groups ($p=0.686$).

The data were then analyzed, further, using one-way ANOVAs for each level of test feedback. For the above average feedback group results revealed a significant effect of emotion $F(2,117)=3.32$, $p=0.040$, $f=0.238$. A polynomial contrast showed that the means followed a quadratic trend ($p=0.015$). For the no feedback group results did not reveal any significant effect of emotion $F(2,117)=0.97$, $p=0.384$, or any significant trend either linear ($p=0.174$) or quadratic ($p=0.805$). For the below average feedback group results again revealed a significant effect of emotion $F(2,117)=5.32$, $p=0.006$, $f=0.305$ and, again, a polynomial contrast showed that the means followed a quadratic trend ($p=0.010$).

The manipulation check data were analyzed using two one-way ANOVAs. The first revealed a significant main effect of the guilt manipulation $F(2,357)=25.46$, $p<0.001$, $f=0.377$, with the guilt induction group ($M=3.54$, $SD=0.94$) reporting more

Fig. 1 Attributions made for above average performance, unknown performance, and below average performance by participants induced to feel guilt, no emotion, and revulsion. (Bars represent standard errors of means)



guilt than either the control group ($M=1.55$, $SD=2.27$) or the revulsion induction group ($M=1.58$, $SD=1.98$). The second test revealed a significant main effect of the revulsion manipulation $F(2,357)=7.24$, $p=0.001$, $f=0.201$, with the revulsion induction group ($M=3.53$, $SD=2.98$) reporting more revulsion than either the control group ($M=2.25$, $SD=2.99$) or the guilt induction group ($M=3.44$, $SD=2.74$).

Discussion

The results of this experiment indicated clearly that participants were succumbing to the self-serving bias. Participants who met with success made more internal attributions for their performances than participants who met with failure. This was the first study to investigate the influence of specific emotions over this tendency for individuals to succumb to the self-serving bias.

The self-serving bias is motivated either by a desire to enhance self-esteem after positive outcomes or to protect self-esteem after negative outcomes. In this study, the specific emotions of guilt and revulsion had a significant effect over both of these motivations. A significant quadratic trend was revealed for both participants meeting with success and participants meeting with failure. For participants meeting with success the emotions of guilt and revulsion facilitated a reduced tendency to self-enhance (guilty/ revolted participants made more external attributions for their success than individuals in the control condition). Similarly, for participants meeting with failure, the emotions of guilt and revulsion facilitated a reduced tendency to self-protect (guilty/ revolted participants made more internal attributions for their failure than individuals in the control condition).

This was also the first study to evaluate how well competing theories of emotional influence account for the observed effects of emotion over the self-serving bias. Results from this study provided strong support for valence-based theory.

According to the “self-threat” valence-based approach to emotional influence, the pattern of results seen in this study can be accounted for by the drop in self-esteem that the negative emotions of guilt and revulsion engendered. That is, participants had less self-esteem to protect in the negative feedback conditions and less self-esteem to enhance in the positive feedback conditions. According to the “affect priming” valence-based approach, participants became more pessimistic in both the guilt and revulsion conditions than in the control condition, because negative emotions primed the retrieval and use of negative information in the attribution making process. Similarly, according to the “affect as information heuristic” valence-based approach, participants became more pessimistic in their attributions, because the experience of a negative emotion lead them to assume that the situation about which they were making an attribution was also negative.

This study does not find any support for the appraisal tendency framework account of how emotions influence judgment. According to the appraisal tendency model individuals experiencing guilt should have perceived personal responsibility for events (making them more likely to self-enhance after success and less likely to self-protect after failure), while individuals experiencing revulsion should have perceived other/circumstantial responsibility for events (making them less likely to self-enhance after success and more likely to self-protect after failure). This did not happen.

The results of this study have clear theoretical implications. It appears that, when making attribution judgments, it is the valence of an experienced emotion that is important to the decision-maker. Results such as those found by Forgas and Locke (2005) that negative moods made people more pessimistic in their attributions and positive moods made people more optimistic in their attributions would support this view. However, with other types of judgment, such as those about risk (for example, Lerner and Keltner 2000) evidence suggests that it is the appraisal dimensions of emotion that are important. Thus, the tentative hypothesis could be made that, it is the type of judgment that decision-makers are faced with that determines whether the valence of an emotion becomes relevant or whether the appraisal dimensions of an emotion become relevant. Alternatively, it could be that appraisal dimensions are influential for some specific emotions (for example, fear and anger) but not for others (for example, guilt and disgust).

From a practical point of view, this study also has real-world implications. The self-serving bias has been observed in numerous domains of human behavior including both relationships and the workplace. A large number of people receive counseling for their relationships and many people are given mentoring on their work-performances. In both situations the ability for individuals to make accurate attributions about events is paramount. This study highlights the importance of maintaining neutral mood states in all such counseling/ mentoring situations to facilitate this attribution-making process.

Notwithstanding the informative results obtained from this experiment, there are some limitations to the study. When looking at the manipulation check data it is apparent that the induction of guilt was much more effective than the induction of revulsion. The effect size for guilt was medium, while the effect size for revulsion was small. The mood induction method might have been improved by incorporating

more vivid pictures (for example, real photos of revolting stimuli) within the mood inducing graphical images.

The mood induction method also used slightly different wording for guilty participants (who were asked to report things that *they* had done that made them feel guilty) and revolted participants (who were asked to report things that *others* had done that made them feel revolted). This wording made a marked improvement to the emotional manipulation over a pilot study which used, “describe three things that make you feel guilty/ revolted” as its text. This indicates that the appraisal dimension of self/ other responsibility is important when inducing guilt and revulsion. If the appraisal tendency framework had received support in this experiment (if the dimension of self/ other responsibility had influenced peoples’ attributions), then this change in wording might have constituted a potential confound. However, since the underlying dimension of self/ other responsibility had no effect on peoples’ attributions (it was only valence that was important), no confound arose.

One other issue of note in this study was that performance feedback had much more effect on participants when it was negative than when it was positive. That is, participants receiving negative feedback made more self-serving attributions than those receiving no feedback, whereas there was no overall difference between the attributions made by participants receiving positive feedback and those receiving no feedback. This may have been due to the nature of the sample. That is, university students are academically more successful than their peers; hence their self-esteem is likely to be high. Such high self-esteem individuals may have less need to self-enhance after success than individuals from other populations.

Numerous future studies are suggested by this paper. For example, it would be informative to know which of the valence-based theories mentioned in this work (self-threat, affect priming, and affect as information) offers the best account for emotional influences over the self-serving bias. In addition, it would be useful to expand the body of empirical evidence about the influence of specific emotions over other attribution biases and, most importantly, it seems imperative that we uncover the factors that determine when valence or appraisal dimensions inform decision-making. Experiments are planned to explore these exciting new avenues.

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