Growth motivation moderates a self-serving attribution bias in the health domain

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A R T I C L E   I N F O

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A B S T R A C T

Past research on the self-serving attribution bias has shown that people typically protect their self-worth by attributing shortcomings to external factors to avoid personal responsibility. Subsequent work suggests that this pattern is attenuated among individuals highly motivated to achieve personal growth. We attempted to conceptually replicate past research on this moderating effect in a novel context. After measuring personality variation in growth motivation, participants (N = 126 college students) were randomly provided feedback implying that they were less healthy than their peers (failure), healthier than their peers (success) or a no feedback control. We found that among participants receiving failure feedback, growth motivation negatively predicted the extent to which participants attributed health outcomes to luck. While the expected pattern of the self-serving attribution bias was implied at very low levels of growth motivation, failure caused high growth-motivation participants to believe that their health was less influenced by chance factors.

1. Introduction

An individual suffering poor health may wonder why they find themselves in that position. Some may blame health troubles on themselves and think of ways in which they could have made healthier choices to exercise more, set aside more time for sleep, or changed their diet. In other words, people could take personal responsibility for their current situation and subsequently work to improve their future behavior. Others may write off poor health as bad luck or a genetic inevitability, a conclusion foregone long before they could have intervened. This implies that there is no room for future improvement which cannot undo factors beyond one's control.

What accounts for this diversity of reactions to a negative situation? A central process in explaining this variation is the self-serving attribution bias, the tendency to attribute personal success to internal causes and failure to external causes (Sedikides, Campbell, Reeder, & Elliot, 1998; Zuckerman, 1979). For instance, a student is more likely to credit their intelligence for an “A” on an exam but a teacher’s unfairness for an “F” (Noel, Forsyth, & Kelley, 1987). Other research shows that wrestlers with winning records more frequently attributed their success to internal factors (e.g., hard work) while losing wrestlers attributed their records to external factors (De Michele, Gansneder, & Solomon, 1998).

The self-serving attribution bias allows the individual to bolster or maintain their sense of self-worth while minimizing negative aspects of the self (Hepper, Gramzow, & Sedikides, 2010). Substantial evidence for this claim has been provided by several comprehensive meta-analyses, suggesting threats to one's self-concept elicit heightened attribution of personal failures toward external causes (Campbell & Sedikides, 1999; Mezulis, Abramson, Hyde, & Hankin, 2004). For example, people are most likely to enact this bias during self-relevant tasks, when attention is focused on the self specifically, particularly among individuals with initially high levels of self-esteem (Campbell & Sedikides, 1999). These empirical findings support the view that the self-serving bias is most likely under those conditions in which the self would be threatened by failure. In contrast, the self-serving bias is substantially smaller in samples with depression compared to non-clinical controls, further demonstrating that the bias appears primarily among those motivated to maintain a positive view of the self (Mezulis et al., 2004).

1.1. Individual differences in the self-serving attribution bias

While this tendency has been reliably shown under some conditions, there is important personality variability in the self-serving bias. One early study (Knee & Zuckerman, 1996) found that the self-serving bias did not appear among participants who reported both a low Control orientation and a high Autonomy orientation as measured by the General Causality Orientations Scale (Deci & Ryan, 1985). This measure assesses variability in three broad clusters of motivations by asking people which of three responses to a scenario best reflects their personality. Some responses represent an Autonomy orientation, a focus on
the pursuit of personal interests and growth. Other response suggest a Control orientation, a focus on external determinants of behavior such as rewards (e.g., money). Finally, a third cluster of motives is referred to as the Impersonal orientation, a pattern of abdicating agency by not allowing either personal or external motives to shape one's behavior.

Knee and Zuckerman (1996) proposed that the lack of a self-serving attribution bias among low Control/high Autonomy participants may be due to the combination of low ego investment in external rewards (reflected by low Control orientation) and high motivation to pursue personal growth and learning reflected in an Autonomy orientation (for further evidence of the relationship between Autonomy and growth, see Lee, Sheldon, & Turban, 2003). Further support for this view was found in later research (Knee & Zuckerman, 1998) suggesting that low Control/high Autonomy oriented participants were least likely to rely on defensive coping strategies, such as denial or distraction.

More recent work specifically targeting growth motivation, a desire to explore, learn, and expand one’s abilities, shows that this motive specifically moderates the presence of a self-serving attribution bias (Bauer, Park, Montoya, & Wayment, 2015). In fact, one study found that individuals with higher growth motivation tended to make more internal attributions for failure, at least among those relatively high in self-esteem (Park, Bauer, & Arbuckle, 2009). Among participants lower in self-esteem, this link was decoupled. This pattern suggests that people seeking to improve themselves take greater responsibility for their shortcomings, but only when they feel secure enough to do so. Other research has shown that women low (vs. high) in growth motivation responded to negative feedback by self-handicapping on a future task; specifically, low-growth motivation women were more likely to select sample materials that would decrease their likelihood of succeeding on a future task (Brown, Park, & Folger, 2012). Put another way, high (vs. low) growth-motivated women responded to an initial failure with less motivation to establish a clear external attribution for future failure.

1.2. Current research

Although Park et al. (2009) focused specifically on academic failures, such findings may generalize to other domains. The goal of the present study is to conceptually replicate and extend this initial work treating growth motivation as a central moderator of the self-serving attribution bias.

We do so in two crucial ways: first, we extend this analysis to health, a practically important domain in which individuals commonly make external attributions to genetics, medical professionals, and a host of other targets one could blame (Luszczynska & Schwarzer, 2005; Wallston et al., 1978). This concern is practically important as individuals who avoid personal responsibility for contributing to health outcomes may fail to take active steps to eat well, avoid risk factors for serious disease (e.g., smoking), exercise, or any other actions that have been shown to minimize health risks. In fact, inaction on these kinds of preventative behaviors has been found to be a leading driver of health problems and health cost (Thorpe et al., 2007). We are familiar with no research to date that has explored the possibility that growth motivation may moderate the self-serving attribution bias in this context specifically, so this is an important area for further exploration.

Secondly, the current study improves upon several methodological limitations of past research testing whether growth motivation moderates the self-serving attribution bias. While initial work by Knee and Zuckerman (1996, 1998) implies that growth motivation is a moderator of the self-serving attribution bias, it relies on Autonomy orientation as an indicator of this motive. This is not precisely a measure of the motivation to pursue growth per se and thus there is value in specifically measuring growth motivation. While Park et al. (2009) used a more complete, multidimensional assessment of growth motivation, their assessment of the self-serving attribution bias was limited to a single item, bipolar scale. Because this measure does not independently assess attributions, it limits our knowledge of whether differences in the self-serving bias are being driven by changes to internal attributions, external attributions, or both. In the current project, we leverage validated measures of both growth motivation and attributions for health outcomes to provide a clearer test of the moderating role of growth motivation in the self-serving attribution bias.

Past research demonstrates that high growth participants fail to show the same defensiveness indicated among those lower in growth motivation, but why this pattern occurs is an open question. External attributions for failure, such as blaming poor health on genetics or bad luck, impose barriers to personal improvement. Accordingly, we predicted that growth motivation would predict lower relative attributions to external sources of health outcomes, particularly when participants were told that they were falling short in this domain.

2. Method

2.1. Participants

Participants were 137 undergraduates at the University of Southern Mississippi who participated for course credit. We employed a priori rule regarding sample size and instead merely aimed to recruit the largest sample size possible by the end of the semester.¹ No data were collected after analysis.

Of the initial sample, 10 participants were excluded from analysis a priori for failing a comprehension check (described below) and one for failing to complete the primary outcome measure. One-hundred twenty-six participants comprised the final sample for analysis (105 Women, 21 Men; Mage = 20.76, SDage = 4.23; 48 White/65 Black/2 Hispanic or Latino/6 Asian/5 Native American). All data and model syntax are publicly available at https://osf.io/7sb2a/.

2.2. Materials and procedures

2.2.1. Growth motivation

After providing demographic information, participants completed the Personal Growth Initiative scale (PGIS-II; Robitschek et al., 2012). Participants rated their agreement (1 = Strongly Disagree; 7 = Strongly Agree) with 16 statements assessing their motivation to pursue personal growth (e.g., “I set realistic goals to make changes in myself”; “I actively work to improve myself”) with higher scores indicating greater growth motivation. Primary analysis employed a full composite of the items to attain a general aggregate of growth motivation (α = 0.92, M = 4.75, SD = 0.69). However, the scale is comprised of four subscales assessing separate facets: 1) Readiness for Change, the extent to which individuals feel prepared for growth (α = 0.81, M = 4.86, SD = 0.82); 2) Planfulness, the extent to which individuals actively set growth goals (α = 0.86, M = 4.88, SD = 0.77); 3) Using Resources, the extent to which individuals take advantage of growth opportunities in their environment (α = 0.76, M = 4.18, SD = 1.05); and 4) Intentional Behavior, an assessment of participants’ intrinsic motivation to improve (α = 0.81, M = 5.07, SD = 0.74).

2.2.2. Health feedback

Following completion of PGIS-II, participants were asked to complete a fabricated health assessment comprised of 16 items asking about diet, sleep habits, exercise, and family health history. The purpose of the quiz ostensibly was to provide an objective assessment of each participant’s health. In truth, participants were randomly assigned to one of three feedback conditions. In the Failure condition (n = 42),

¹ A post-hoc power analysis using the observed parameters for the significant interaction in the current study and 10,000 simulations yielded an estimated power of 0.712 to detect that effect. This falls short of the standard criterion of 0.80, although post hoc power analysis is widely considered problematic (e.g., Lakens, 2014 blog post) so this result must be interpreted with some caution.
participants were told that they were in the 26th percentile for health performance at universities in their state. In the Success condition (n = 42), participants were instead told that they were in the 62nd percentile. Both the Failure and Success cells used illustrative graphs and clear descriptions to elaborate on the idea that participants were healthier (or less healthy) than the average college student. Finally, the remaining participants (n = 42) were assigned to a no feedback (Control) condition that moved immediately from the health assessment to our primary outcome.

In both the failure and success conditions, participants were given a single, face-valid item to ensure that they understood the information provided: “The feedback you received on the previous task indicated that your health is: Below average/Average/Above Average.” Ten participants were excluded based on this item for indicating an incorrect response (n = 8; 6 in the Success condition, 2 in Failure) or leaving it blank (n = 2).

2.2.3. Health attributions

To assess the self-serving attribution bias, participants were then provided with the Multidimensional Health Locus of Control Scale (MHLC; Wallston et al., 1978; Wallston, 2005). This measure includes three 6-item subscales assessing attributions for health outcomes from which we calculated composite scores. The Internal subscale assesses personal attributions for negative health outcomes (e.g., “I am directly responsible for my health”), “Whatever goes wrong with my health is my own fault”; αInternal = 0.70, MInternal = 5.35, SDInternal = 0.95. The Chance subscale measures attributions to luck (e.g., “Often I feel that no matter what I do, if I am going to get sick, I will get sick”, “When I stay healthy, I’m just plain lucky”; αChance = 0.56, MChance = 2.67, SDChance = 0.90). Finally, the Powerful Others subscale measures attributions to medical experts (e.g., “Other people play a big part in whether I stay healthy or become sick”, “I can only maintain my health by consulting health professionals”; αOthers = 0.72, MOthers = 2.81, SDOthers = 1.01).

2.3. Analysis

We initially analyzed each subscale of the MHLC separately. We began by testing whether feedback conditions differed in each attribution. Then, to test our primary prediction, we regressed each outcome onto condition (Success vs. Failure vs. Control; dummy-coded with control as the baseline condition), composite PGIS scores (centered and standardized), and their expected interaction.

Finally, to assess the relative weight of Internal (versus External) attributions as an estimate of the self-serving attribution bias, we calculated for each participant a difference score subtracting a participants’ internal attribution from the sum of both external attribution scores (with higher scores reflecting a more external attribution for health; Mgrand = 0.13, SDgrand = 1.94, Range = [−4.83, 5.67]). This follows past research (e.g., Park et al., 2009) assessing the self-serving attribution bias using a differential measure.

3. Results

3.1. Internal

Initial analyses indicated no difference between groups in Internal attributions (see Table 1 for means). Regressing Internal attributions for health onto the predicted model indicated no significant interactions (ps > 0.45) nor any main effects (ps > 0.66; see Table 2 for all parameters).

3.2. External–chance

There were no differences between groups in external attributions of health outcomes to chance (Table 1). The resulting interaction model for the chance subscale (see Table 2) indicated the predicted interaction between growth motivation and the failure feedback (Fig. 1). Specifically, we found that growth motivation predicted substantially lower levels of external attribution in the failure feedback condition, b = −0.41, β = −0.48, SE = 0.12, t(40) = 3.43, p = .001. However, no such trend was present in the success, b = −0.03, β = −0.03, SE = 0.14, t(40) = 0.18, p = .86, or control, b = 0.007, β = 0.008, SE = 0.14, t(40) = 0.05, p = .96, conditions.

Note. Different letters indicate means that differ pairwise at p < .05.

Table 1

<table>
<thead>
<tr>
<th>Mean scores of primary outcomes by feedback condition.</th>
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<tr>
<td>Failure</td>
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<tr>
<td>Internal</td>
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<td>Chance</td>
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<tr>
<td>Powerful others</td>
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<td>Attribution bias (E-I)</td>
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Table 2

Estimated parameters regressing each outcome onto growth motivation, feedback condition, and their predicted interaction.

Note. Different letters indicate means that differ pairwise at p < .05.
fewer external attributions compared to the baseline control ($b = -0.49, \beta = -0.26, SE = 0.27, t(120) = 1.83, p = .07$) and success conditions ($b = -0.46, \beta = -0.24, SE = 0.27, t(120) = 1.74, p = .09$). Those in the success condition did not differ from controls at either low, $b = 0.04, \beta = 0.02, SE = 0.27, t(120) = 0.16, p = .87$, or high growth motivation, $b = -0.02, \beta = -0.01, SE = 0.29, t(120) = 0.08, p = .94$.

3.3. External – powerful others

We found a significant difference in attributions to powerful others by feedback condition (Table 1). Specifically, the pattern of pairwise comparisons indicated that participants told that they were succeeding in the health domain were more likely to credit others with their success than participants in the other conditions. While we did not anticipate this finding, it is a noteworthy effect.

Submitting scores on this measure to the predicted regression model returned only the significant main effect of the success condition (see Table 2). No other main effects ($ps > 0.16$) or interactions ($ps > 0.35$) were significant.

3.4. Attribution bias

Finally, we computed difference scores for each participant by subtracting internal attributions for health from the sum of both external attributions. This showed no significant differences between conditions (Table 1). Finally, we fit the predicted model to those difference scores and evidence further suggested that growth motivation moderated the self-serving attribution bias in the failure condition (Table 2; see Fig. 2 for pattern of effects). Specifically, we found that growth motivation marginally predicted a diminished bias toward external attributions in the failure feedback condition (i.e., the self-serving attribution bias), $b = -0.56, \beta = -0.29, SE = 0.29, t(40) = 1.91, p = .06$. However, no such trend was present in the success, $b = 0.09, \beta = 0.05, SE = 0.29, t(40) = 0.32, p = .75$, or control, $b = 0.24, \beta = 0.12, SE = 0.31, t(40) = 0.78, p = .44$, conditions.

At low ($-1$ SD) levels of growth motivation, both the success and failure feedback conditions tended to report more external attributions although these differences were not significant (Success vs. Control: $b = 0.84, \beta = 0.20, SE = 0.58, t(120) = 1.43, p = .15$; Failure vs. Control: $b = 0.81, \beta = 0.20, SE = 0.63, t(120) = 1.29, p = .19$). The Failure vs. Success comparison was not significant, $b = -0.02, \beta = -0.005, SE = 0.58, t(120) = 0.04, p = .97$, due in large part to the substantial increase in attributions to Powerful Others in the Success condition.

In contrast, at high ($+1$ SD) levels of growth motivation, the model suggested that those in the failure condition made (non-significantly) more internal attributions compared to control, $b = -0.78, \beta = -0.19, SE = 0.58, t(120) = 1.34, p = .18$, but significantly more than the success condition, $b = -1.32, \beta = -0.32, SE = 0.58, t(120) = 2.25, p = .03$. Those in the success condition continued to report (non-significantly) more external attributions compared to control, $b = 0.53, \beta = 0.13, SE = 0.64, t(120) = 0.84, p = .40$.

4. Discussion

This study replicates and extends prior research showing that growth motivation moderates the existence of the self-serving attribution bias, particularly in response to perceived failure. Based on past research on this bias, participants informed that they were far below-average in health would be expected to externalize attributions for their shortcomings to protect self-esteem (i.e., a main effect). The interactions we observed suggested this reaction was only present only at fairly low levels of growth motivation. In contrast, we found that highly growth-motivated participants actually made substantially lower attributions to luck and tended on the whole to thereby more strongly internalize attributions for their health outcomes even when it might be ego threatening to do so. In other words, growth motivation predicted a greater willingness to place a greater share of blame on the self as hypothesized, ostensibly to preserve potential for future improvement.

In addition to confirming the predicted moderation of the self-serving attribution bias by growth motivation, the results also revealed some unexpected patterns. First, we did not find evidence that internal attributions for health specifically reacted to the feedback condition (or
its potential moderation by growth motivation. As noted, past research on the self-serving attribution bias (e.g., Park et al., 2009) relied on bipolar assessments that lack the ability to disentangle effects on internal (vs. external) attributions specifically. It may be that participants’ sense of personal control over health is simply not as malleable as attributions to luck, particularly when those attributions to chance offer a handy account of personal failure. At a minimum, these findings highlight the fact that perhaps the self-serving attribution bias operates by primarily shifting external (rather than internal) attributions, at least in the context of health.

We also found that participants who received feedback suggesting that they were above average in their health tended to credit this success to external factors, particularly health experts in their environment. While it may be self-flattering to take personal credit for success, these individuals may have felt secure or positive enough to express gratitude toward others (given the established correspondence between gratitude and positivity; Emmons & McCullough, 2003).

We would hasten to note, however, that overall power for the current studies tended to fall short of standard criteria. In part this was a function of losing an unexpectedly large portion of the sample to failures in the comprehension check (10/137). This diminished power may have rendered some significant effects merely marginal (as in the difference score analysis), but further work would be necessary to address this possibility. Given that the predicted effect is essentially a conceptual replication and extension of past research into the health domain, we believe that our work still incrementally adds to the evidence in support of the moderating role of growth motivation in the self-serving attribution bias.

Interventions designed to enhance growth motivation are more effective when they promote the development of strengths, but not when they focus on personal deficiencies (Meyers et al., 2015). Accordingly, it is notable that growth motivation predicted an overall tendency to avoid blaming failure on external causes: More research is needed to understand why growth motivation promotes a willingness to accept one’s faults but that a focus on faults does not reciprocally increase growth motivation. However, we would hasten to add that the present data further recommend that enhancing growth motivation may be a viable route to promoting health by encouraging people to take personal responsibility for their health outcomes.

Further research is also required to understand which facets of growth motivation ultimately moderate the self-serving attribution bias. While we focused on the PGIS, other models of growth motivation identify different elements in this broad construct. For example, other research (Bauer et al., 2015) demonstrates that a growth motive can be expressed in more reflective outcomes, such as developing richer and more nuanced perspectives on the world or an experiential form focused on pursuing relationships and experiences that enhance the self. Our findings are unclear on which form of growth motivation may be more important in attenuating the defensiveness of the self-serving attribution bias. On the one hand, a motivation to learn about oneself and the world (reflective growth motivation) may make one more receptive of negative feedback when it provides new insight; On the other hand, a motivation to pursue challenges and improve the self (experiential growth motivation) may make one more receptive to situations that might otherwise elicit defensiveness.

In summary, the current research demonstrates that the self-serving attribution bias in response to failure depends on personality variation in growth motivation. Low levels of growth motivation are associated with a tendency to attribute failures to external sources, while higher levels of growth motivation predicted a greater willingness to internalize failure. This research extends an established finding into the domain of health, while raising new questions about how and why growth motivation ultimately diminishes the need for self-protective patterns of causal attribution.

References


