

# The Bad Can Be Good: When Benign and Malicious Envy Motivate Goal Pursuit

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Benign and malicious envy are a consequence of an unfavorable upward comparison to another individual (i.e., a negative self-other discrepancy). Benign (malicious) envy occurs when people believe the envied individual deserves (does not deserve) his/her advantage. Prior research has shown that benign envy motivates a person to address the self-other discrepancy via self-improvement, whereas malicious envy does not. This research shows that both types of envy, not just benign envy, can motivate self-improvement, provided that the opportunities to do so occur outside the envy-eliciting domain. Benign envy increases the accessibility of the belief that effort determines whether people are rewarded; hence, it motivates process-focused goal pursuit and the use of products that emphasize effort-dependent self-improvement. Malicious envy increases the accessibility of the belief that the effort does not determine whether people are rewarded; hence, it motivates outcome-focused goal pursuit and the use of products that emphasize effort-independent self-improvement. Implications and potential extensions in the areas of envy, self-conscious emotions, and goals are discussed.

**Keywords:** self-conscious emotion, benign envy, malicious envy, goal pursuit, self-improvement

Consider Dana, a graduating MBA student in the midst of job interviews. Dana is a finalist for a job at a prestigious digital marketing agency. During a

Friday social, Dana learns that one of her peers, Claire, has just been offered a job at the agency. Dana is immediately envious. Research suggests that the reason Claire received the job offer will determine the type of envy Dana experiences (Lange and Crusius 2015a, 2015b; Van de Ven, Zeelenberg, and Pieters 2011a, 2011b). If Claire deserved the offer, owing to her skills and preparation, Dana should experience benign envy. If Claire did not deserve the offer, because she leveraged social relationships with employees of the agency, Dana should experience malicious envy. We are interested in how these two types of envy will subsequently motivate Dana to self-improve in other aspects of her life (e.g., physical, mental, social). To date, this research question has not been addressed.

The influence of envy on out-of-domain behaviors is unclear because prior research has focused on how envy influences behavior within the envy-eliciting domain (e.g., career goals, in the case of the example above; Van de Ven et al. 2011a). Research on within-domain behavior shows that benign envy motivates people to address the discrepancy between themselves and the envied individual via

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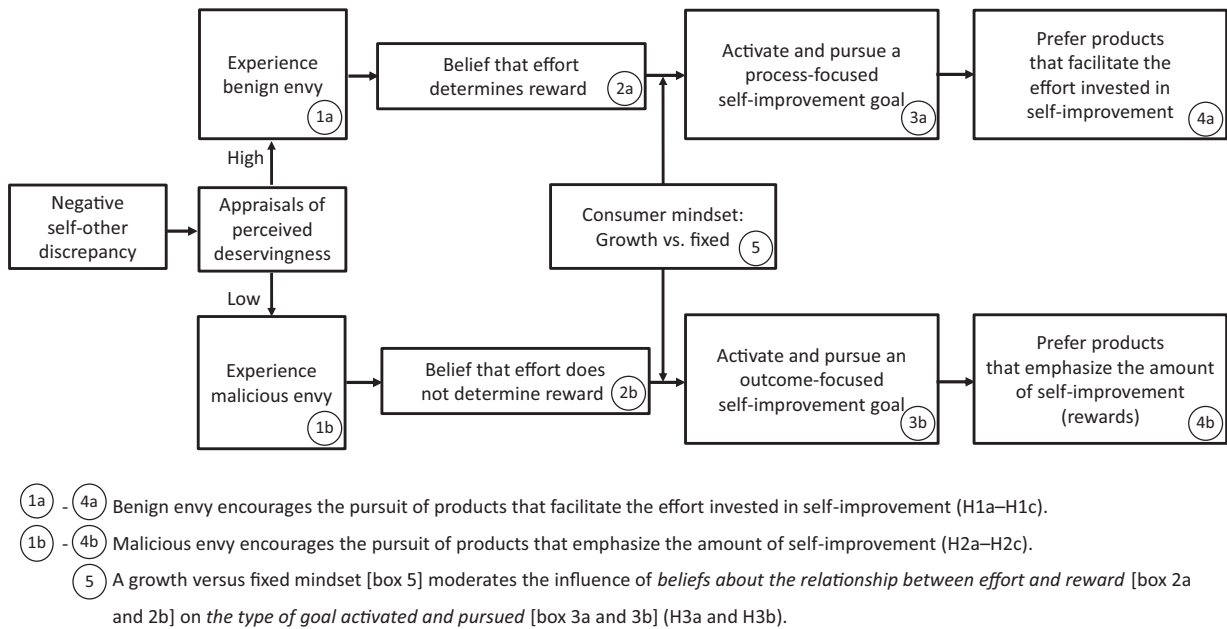
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FIGURE 1

## THE INFLUENCE OF ENVY ON OUT-OF-DOMAIN SELF-IMPROVEMENT



self-improvement (Van de Ven, Zeelenberg, and Pieters 2009). By contrast, malicious envy motivates people to address the discrepancy via negative behaviors (e.g., denigrate the envied individual, discredit the individual's superior advantage; Van de Ven et al. 2009; van Dijk et al. 2006). This has led to the conclusion that benign envy is motivating (e.g., "I can do that if I try") and malicious envy is demotivating (e.g., "What's the use of trying?").

In the current research, we hypothesize that both benign and malicious envy can encourage self-improvement behaviors, provided the opportunities to self-improve occur outside the envy-eliciting domain (see figure 1). We propose that benign envy (figure 1, box 1a) increases the accessibility of the belief that effort determines whether people are rewarded (figure 1, box 2a). In turn, this belief and benign envy combine to activate a process-focused self-improvement goal (figure 1, box 3a). Process-focused goals highlight the activities that must be performed to attain a goal (Touré-Tillery and Fishbach 2014), and therefore increase a consumer's motivation to buy products emphasizing how effort results in self-improvement (figure 1, box 4a). By contrast, malicious envy (figure 1, box 1b) increases the accessibility of the belief that effort does not determine whether people are rewarded (figure 1, box 2b). In turn, this belief and malicious envy combine to activate an outcome-focused self-improvement goal (figure 1, box 3b). Outcome-focused goals highlight the benefits of goal attainment (Touré-Tillery and Fishbach 2014), and

therefore increase a consumer's motivation to buy products that emphasize the amount of self-improvement (figure 1, box 4b). Finally, we hypothesize that these processes are moderated by a consumer's mindset about the ability to improve (figure 1, box 5).

This research makes four contributions. First, it provides evidence contrary to the assumption that benign envy is beneficial and malicious envy is maladaptive. Second, it illustrates that the emotion-to-goal-activation process can be informed by the beliefs that are generated by the emotion (figure 1, boxes 2a and 2b). Third, it highlights the role of emotion as a determinant of when a given goal (e.g., self-improvement) is represented in one of two ways (e.g., process-focused, outcome-focused; figure 1, boxes 3a and 3b), and consequently encourages different approaches to goal pursuit (figure 1, boxes 4a and 4b). Fourth, it investigates how the interaction between emotions and goals influences goal pursuit.

## THEORETICAL DEVELOPMENT

### The Multifaceted Nature of Envy

Envy is a negatively valenced, self-conscious emotion that is experienced subsequent to an unfavorable upward comparison to another individual in a self-relevant domain (Smith and Kim 2007; Van de Ven et al. 2011b). The unfavorable upward comparison pertains to the envied

individual's superior qualities, achievements, or possessions (Miceli and Castelfranchi 2007; Parrott and Smith 1993). For instance, envy can occur for performance reasons, such as when another individual achieves first place in a competition or receives a promotion at work (Cohen-Charash 2009). Envy can also occur for more materialistic reasons, such as when another individual possesses a sought-after product (e.g., designer handbag) or receives preferential treatment (e.g., flies first-class; Belk 1985; Van de Ven et al. 2011a).

Van de Ven et al. (2009, 2011a, 2012) have found support for two distinct facets of envy: benign envy and malicious envy. While both benign and malicious envy involve equivalent levels of negative affect and frustration (Crusius and Lange 2014; Lange and Crusius 2015a), the response to each varies owing to the circumstances that generated the envy (i.e., appraisal information). Specifically, benign envy occurs when the envied individual's success is deserved owing to effort, ingenuity, or persistence. In these situations, the envious individual responds by trying to "level up" to the envied individual (Van de Ven et al. 2011b). As a result, benign envy often leads to behaviors focused on self-improvement (Lange and Crusius 2015a; Van de Ven et al. 2012). By contrast, malicious envy occurs when the envied individual's success is undeserved owing to chance, endowment, or nepotism. In these situations, the envious individual responds by trying to "level down" the envied individual (Van de Ven et al. 2011b). As a result, malicious envy often leads to denigration of the other, hostility toward the other, and discounting the other's accomplishments (Van de Ven et al. 2009; van Dijk et al. 2006).

### Benign versus Malicious Envy and Process-versus Outcome-Focused Goal Pursuit

The research discussed above depicts benign envy as adaptive, and malicious envy as maladaptive, for motivation. In the present research, we leverage three properties from the functionalist perspective of emotion that challenge the conclusion about malicious envy. First, the functionalist perspective assumes that all emotions, regardless of whether the emotion is positively or negatively valenced, exist to facilitate adaptive responses to the environment (Griskevicius, Shiota, and Nowlis 2010; Lazarus 1991). This suggests that there should be situations in which both benign and malicious envy can be motivating. Second, emotions are multidimensional and, consequently, their effect on behavior can vary depending on the context (Campos et al. 1994; Frijda 2005; Keltner and Gross 1999). This implies that both facets of envy may encourage different behavioral responses when attempting to reduce the self-other discrepancy, especially when there is an opportunity to perform behaviors outside of the envy-eliciting domain. Third, functionalists assume that an

emotion consists of the experience of the emotion as well as a collection of subroutines that use appraisal, contextual, and goal information to guide behavioral responses to the emotion (Salerno, Laran, and Janiszewski 2014; Tooby and Cosmides 2008). Thus, the appraisal information that accompanies each facet of envy could lead to different motivational orientations, which could then affect goal pursuit.

Goals research has revealed that there are two unique approaches to goal pursuit. *Process-focused* goal pursuit highlights the activities that people perform on their way to attaining a goal (Touré-Tillery and Fishbach 2014). When people engage in process-focused goal pursuit, their motivation depends on the extent to which (1) the activities performed are perceived as relevant to the goal and (2) people perceive their own behavior as a causal agent for goal attainment (i.e., goal attainment is contingent on their effort; Touré-Tillery and Fishbach 2011, 2018). Conversely, *outcome-focused* goal pursuit highlights the benefits that people acquire upon attaining a goal, independent of the activities performed to get there (Touré-Tillery and Fishbach 2014). When people engage in outcome-focused goal pursuit, their motivation depends on the extent to which (1) the goal is desirable (i.e., goal value) and (2) the goal is attainable, wherein goal attainment is not contingent on effort (Touré-Tillery and Fishbach 2011, 2018).

An implication of this view of goal pursuit is that consumers should more strongly prefer goal-relevant means (e.g., products) that are framed to be consistent with process-focused or outcome-focused goal pursuit. To illustrate, consider a consumer with a weight loss self-improvement goal. On the one hand, a weight loss program could be described in terms of activities that lead to weight loss (count calories, portion meals, exercise, etc.). In this case, the weight loss program should appeal to a person engaged in process-focused goal pursuit. On the other hand, a weight loss program could be described in terms of successful outcomes (expected amount of weight loss, before/after photos, testimonials, etc.). In this case, the weight loss program should appeal to a person engaged in outcome-focused goal pursuit.

We predict that both benign and malicious envy will motivate the pursuit of self-improvement goals, but that the beliefs made accessible by the type of envy will determine the approach to goal pursuit (e.g., process-focused, outcome-focused; see figure 1). When benign envy is experienced, it should increase the accessibility of the belief that effort determines whether people are rewarded (figure 1, box 2a). As a result, the experience of benign envy should encourage people to take a process-focused approach to self-improvement (e.g., what the person does to pursue the goal; figure 1, box 3a). In turn, a process-focused approach to self-improvement should increase the appeal of products that facilitate the effort invested in self-improvement

(Touré-Tillery and Fishbach 2011, 2018) (figure 1, box 4a). Stated formally:

**H1:** Benign envy, relative to no emotion and malicious envy, will

- a. increase the activation of a process-focused self-improvement goal, and
- b. increase the preference for products that facilitate the effort invested in self-improvement.

**H1c:** The effect of benign envy on goal pursuit will be mediated by the belief that effort determines reward.

Three pieces of evidence support this conceptualization. First, benign envy arises when people perceive that the envied individual has worked for something and, therefore, the superior advantage is deserved (Van de Ven et al. 2009, 2011a). Thus, this deservingness appraisal creates the perception that self-improvement depends on one's effort. Second, benign envy can occur in response to another person's expression of authentic pride (Lange and Crusius 2015b), which is a type of pride experienced in response to an effort-based accomplishment (Tracy and Robins 2004). This finding suggests that benign envy is sensitive to information that reinforces effort as a necessary determinant of self-improvement. Third, benign envy has been associated with greater hope for success (Lange and Crusius 2015a), which encourages the formulation of behaviors that are needed to achieve salient goals (i.e., a process-focus; Winterich and Haws 2011). Collectively, this evidence suggests that benign envy should increase the accessibility of the belief that effort determines rewards, which should encourage process-focused goal pursuit and result in an increased preference for products that facilitate the effort invested in self-improvement.

When malicious envy is experienced, it should increase the accessibility of the belief that effort does not determine whether people are rewarded (figure 1, box 2b). As a result, malicious envy should encourage people to take an outcome-focused approach to self-improvement (e.g., what the person obtains upon attaining the goal; figure 1, box 3b). In turn, an outcome-focused approach to self-improvement should increase the appeal of products that emphasize the amount of self-improvement (i.e., rewards; Touré-Tillery and Fishbach 2011, 2018; figure 1, box 4b). Stated formally:

**H2:** Malicious envy, relative to no emotion and benign envy, will

- a. increase the activation of an outcome-focused self-improvement goal, and
- b. increase the preference for products that emphasize the amount of self-improvement.

**H2c:** The effect of malicious envy on goal pursuit will be mediated by the belief that effort does not determine reward.

Three pieces of evidence support this conceptualization. First, malicious envy arises when people perceive that the advantage of the envied individual was not worked for and, therefore, was not deserved (Falcon 2015; Kristofferson, Lamberton, and Dahl 2018). This undeservingness appraisal should facilitate the perception that self-improvement is not contingent on the amount of effort exerted. Second, people experience malicious envy in response to another person's expression of hubristic pride (Lange and Crusius 2015b), which is a type of pride experienced in response to an accomplishment that was due to reasons other than effort (e.g., ability; Tracy and Robins 2004). This finding suggests that the malicious envy is sensitive to information that diminishes effort as a necessary determinant of self-improvement. Third, proneness to malicious envy is associated with a greater fear of failure (Lange and Crusius 2015a), which is characterized by a strong desire to succeed (i.e., an outcome-focus; Lang and Fries 2006). Collectively, this evidence suggests that malicious envy should increase the accessibility of the belief that effort does not determine rewards, which should encourage outcome-focused goal pursuit and an increased preference for products that stress the amount of self-improvement.

## Consumer Mindsets Influence Process-Focused versus Outcome-Focused Self-Improvement

Hypotheses 1c and 2c propose that the source of a process-focused versus outcome-focused goal orientation are beliefs about the relationship between effort and reward (see figure 1, box 2a and 2b). One method for testing these hypotheses is to use a measurement-of-mediation approach by measuring the relative strength of the beliefs that are hypothesized to activate the process-focused goal (i.e., the *effort determines reward* belief; see figure 1, box 2a) and outcome-focused goal (i.e., the *effort does not determine reward* belief; see figure 1, box 2b). However, a moderation-of-process approach (Spencer, Zanna, and Fong 2005) could also be used to provide support for our hypothesized process by identifying a factor that might moderate the influence of the effort-reward relationship beliefs on goal activation.

We hypothesize that one such factor is a consumer's mindset (see figure 1, box 5). Consumer mindsets refer to the implicit theories that people hold regarding the malleability of traits and attributes (Murphy and Dweck 2016). People with a growth mindset view their personal qualities as malleable in that they can be improved through effort (Mathur, Chun, and Maheswaran 2016; Park and John 2010). By contrast, people with a fixed mindset view their personal qualities as immutable in that they cannot improve as a result of effort (Jain, Mathur, and Maheswaran 2009; Murphy and Dweck 2016). Consumer mindsets can be a chronic orientation (Mathur, Block, and Yucel-Aybat



2014), but can also be manipulated so that one mindset is more accessible than another (Jain et al. 2009). Importantly, consumer mindsets influence how people process their social environment and, consequently, a mindset can influence a response to an emotional experience.

The growth and fixed mindsets parallel our account of the influence of envy on self-improvement. This implies that the divergent effects of each facet of envy on the emergence of process- versus outcome-focused goal pursuit should be sensitive to the mindset that is active when envy is experienced (see figure 1, box 5). More specifically, a belief that effort determines reward should encourage a process-focused approach to goal pursuit for people who have a growth mindset but not for people who have a fixed mindset, whereas a belief that effort does not determine reward should encourage an outcome-focused approach to goal pursuit for people who have a fixed mindset but not for people who have a growth mindset.

**H3a:** The motivating effect of benign envy on process-focused goal pursuit will be present under a growth mindset, but not under a fixed mindset.

**H3b:** The motivating effect of malicious envy on outcome-focused goal pursuit will be present under a fixed mindset, but not under a growth mindset.

## OVERVIEW OF STUDIES

We investigate our hypotheses across four studies. Study 1 demonstrates that benign and malicious envy encourage the pursuit of process-focused and outcome-focused self-improvement goals (hypotheses 1a and 2a). In addition, study 1 provides support for the hypothesized process (hypotheses 1c and 2c). Study 2 demonstrates that the motivational influence of benign (malicious) envy extends to preference for products that are consistent with a process focus (outcome focus) (hypotheses 1b and 2b). Study 3 provides further evidence for the activation of process-focused and outcome-focused goals. Specifically, study 3 shows that people experiencing benign envy are sensitive to the amount of effort they can exert, whereas people experiencing malicious envy are sensitive to the amount of rewards they can obtain. Finally, study 4 shows that consumer mindsets moderate the influence of each envy type on the motivation to pursue process-focused versus outcome-focused self-improvement goals (hypotheses 3a and 3b).

## STUDY 1

Study 1 investigated the influence of envy on the activation of out-of-domain self-improvement goals. This initial investigation was necessary because prior research had shown benign envy was motivating, but malicious envy

was not, in the envy-eliciting domain. Thus, we needed to show that malicious envy was motivating when out-of-domain opportunities to improve were examined.

We induced participants to feel either benign or malicious envy in the financial domain (i.e., the envy pertained to another's financial freedom). Then, we examined how each facet of envy influenced participants' motivation for self-improvement in the physical health domain (Wilcox, Kramer, and Sen 2011). Critically, we assessed whether self-improvement motivation changed as a function of whether the process or the outcome of the health goal was emphasized (hypotheses 1a and 2a). Afterward, we also measured participants' belief as to whether effort determines reward (hypotheses 1c and 2c).

We predicted that when participants experienced benign envy, they should express greater motivation to pursue the self-improvement goal when it was process-focused. In addition, we expected that this effect would be mediated by an increase in the belief that effort determines reward. Conversely, when participants experienced malicious envy, they should express greater motivation when the self-improvement goal was outcome-focused. This effect should be mediated by an increase in the belief that effort does not determine reward.

## Method

**Design and Participants.** The design was a 3 (emotion: no emotion, benign envy, malicious envy)  $\times$  2 (self-improvement motivation: process-focused vs. outcome-focused) mixed design. Emotion was manipulated between-subjects, while self-improvement motivation was measured within-subjects. Participants were 140 members of an online panel (Amazon's Mechanical Turk, 56% female,  $M_{\text{Age}} = 36.84$ ) who participated in exchange for payment. This was the final sample after 12 participants were excluded from the study (exclusion criteria discussed in the procedure section).

**Procedure.** Participants began by completing a writing task that manipulated emotion. In the no emotion condition, participants were told the purpose of the study was to learn more about people's day-to-day experiences and were asked to write about a typical day. Prior research has demonstrated that this writing task is emotionally neutral (Huang, Dong, and Mukhopadhyay 2014; Salerno, Laran, and Janiszewski 2015). In the envy condition, participants were told the purpose of the study was to learn more about life events that made them feel envy and were asked to write about a time they were envious of someone's financial freedom. We manipulated whether participants wrote about another person's deserved (benign envy condition) or undeserved (malicious envy condition) financial freedom. This manipulation was adapted from prior research showing that perceived deservingness is an appraisal

dimension that determines whether benign or malicious envy is experienced (Crusius and Lange 2014; Lange and Crusius 2015a; Van de Ven et al. 2012).

After completing the writing task, participants were asked to read a series of statements about improving their physical health (see web appendix A for all experimental manipulations and measures). These 10 items (1 = Strongly disagree, 9 = Strongly agree) measured the focus of the self-improvement goal, wherein half of the items assessed process-focused goal activation ( $\alpha = .82$ ; sample item: "I am motivated by thinking about what activities I perform along the path to self-improvement") and the other half of the items assessed outcome-focused goal activation ( $\alpha = .79$ ; sample item: "I am motivated by thinking about what benefits follow from self-improvement"). Next, to assess the accessibility of the belief about whether effort determines (does not determine) reward, participants were asked, "What is your belief in the relationship between effort and reward? Do you feel that rewards in life are determined solely by effort or that rewards in life do not solely depend on effort?" (1 = Rewards solely depend on effort, 9 = Rewards do not solely depend on effort). Thus, lower (higher) responses indicated more accessibility to the belief that effort determines (does not determine) reward.

After completing the dependent measures, participants responded to manipulation-check items. Specifically, participants responded to a question assessing their current overall mood (1 = Very negative, 9 = Very positive) and the extent to which they currently felt envy (1 = Not at all envious, 9 = Very envious). Next, participants in the benign and malicious envy conditions were asked to think about the person they wrote about and indicate "to what extent do you feel that the advantage that person held over you was deserved?" (1 = Not at all deserved, 9 = Very deserved). Next, participants answered personality questions and demographic questions, and indicated whether they currently held a health goal. Finally, participants were debriefed and thanked for their time.

In each of our studies, we excluded participants who (1) failed to follow the instructions (Chen, Lee, and Yap 2017; Curran 2016; Lisjak et al. 2015) or (2) indicated not having the goal under examination (Etkin and Ratner 2012; Fishbach and Dhar 2005; Gao, Li, and Wyer 2016). The failure to follow instructions criterion was determined by the participant's responses to any writing portions in the studies (the envy manipulations of studies 1, 2, and 3). Participants were excluded if they indicated a complete lack of involvement in the writing task (e.g., they wrote "envy experience"), wrote about an unrelated topic, or indicated being unable to recall an experience they were asked to describe. Across all studies, the number of participants excluded did not significantly vary as a function of condition (see web appendix J for additional details on the number of participants who were excluded from each

condition in each study, as well as a comparison of all study results when the exclusion criteria were applied vs. not applied).

## Results

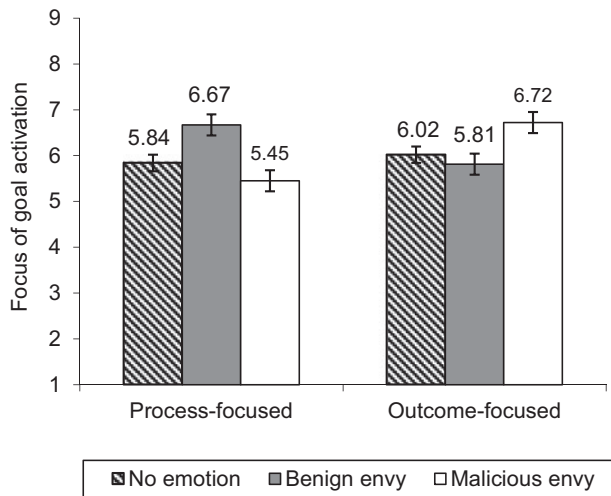
**Manipulation Checks.** An ANOVA on the overall mood measure revealed a significant main effect of emotion ( $F(2, 137) = 31.99, p < .001, \hat{\omega}_p^2 = .307$ ). Compared to the no emotion condition ( $M = 6.11, SD = 1.82$ ), participants reported a more negative mood in the benign envy ( $M = 3.67, SD = 1.94; F(1, 137) = 41.12, p < .001, \hat{\omega}_p^2 = .224$ ) and malicious envy ( $M = 3.36, SD = 2.04; F(1, 137) = 49.77, p < .001, \hat{\omega}_p^2 = .256$ ) conditions. An ANOVA on the envy measure revealed a significant main effect of emotion ( $F(2, 137) = 60.21, p < .001, \hat{\omega}_p^2 = .458$ ). Compared to the no emotion condition ( $M = 3.27, SD = 2.02$ ), participants reported feeling more envious in the benign envy ( $M = 6.90, SD = 1.77; F(1, 137) = 84.57, p < .001, \hat{\omega}_p^2 = .375$ ) and malicious envy ( $M = 6.87, SD = 1.95; F(1, 137) = 78.12, p < .001, \hat{\omega}_p^2 = .356$ ) conditions. Importantly, participants in the benign and malicious envy conditions did not significantly differ in their mood or envy (both  $F_s < 1$ ). Consistent with prior research (Van de Ven et al. 2009, 2012), participants perceived that the advantage held by the envied individual was more deserved in the benign envy condition ( $M_{\text{benign}} = 5.97, SD = 2.40$ ) than the malicious envy condition ( $M_{\text{malicious}} = 2.72, SD = 1.92; F(1, 76) = 43.79, p < .001, \hat{\omega}_p^2 = .354$ ). These results verify the efficacy of our emotion manipulation.

**Focus of Goal Activation.** Web appendix H provides the full reporting of our results, including all possible interactions and main effects, for this and all subsequent studies. The analysis revealed a significant interaction between the manipulated emotion factor and measured focus of goal activation factor ( $F(2, 137) = 9.18, p < .001, \hat{\omega}_p^2 = .105$ ; see figure 2). Participants in the benign envy condition ( $M = 6.67, SD = 1.30$ ) were more process-focused than participants in the no emotion ( $M = 5.84, SD = 1.47; F(1, 137) = 8.28, p = .005, \hat{\omega}_p^2 = .049$ ) and malicious envy ( $M = 5.45, SD = 1.46; F(1, 137) = 15.17, p < .001, \hat{\omega}_p^2 = .092$ ) conditions. Participants in the malicious envy condition ( $M = 6.72, SD = 1.24$ ) were more outcome-focused than participants in the no emotion ( $M = 6.02, SD = 1.62; F(1, 137) = 5.34, p = .023, \hat{\omega}_p^2 = .030$ ) and benign envy ( $M = 5.81, SD = 1.20; F(1, 137) = 10.87, p = .001, \hat{\omega}_p^2 = .066$ ) conditions.

**Mediation Analyses.** An ANOVA assessing the belief in whether effort determines (does not determine) reward revealed a significant main effect of emotion ( $F(2, 137) = 11.04, p < .001, \hat{\omega}_p^2 = .125$ ). Compared to the no emotion condition ( $M = 5.23, SD = 2.39$ ), participants in the benign envy condition were more likely to believe that

FIGURE 2

STUDY 1 RESULTS (ERROR BARS SHOW 95% CONFIDENCE INTERVALS)



effort determines reward ( $M = 4.08$ ,  $SD = 2.44$ ;  $F(1, 137) = 5.45$ ,  $p = .022$ ,  $\hat{\omega}_p^2 = .031$ ), whereas participants in the malicious envy condition were more likely to believe that effort does not determine reward ( $M = 6.49$ ,  $SD = 1.85$ ;  $F(1, 137) = 7.91$ ,  $p = .006$ ,  $\hat{\omega}_p^2 = .047$ ).

Focus of goal activation was a measured variable, so we conducted a mediation analysis for each dependent measure using PROCESS model 4 (Hayes 2018), whereby the 95% confidence intervals (CIs) used to generate each indirect effect were performed using 5,000 bootstrap samples. Each mediation analysis (e.g., figure 1, boxes 1a–3a) assessed the potential mediating role of the effort-determines-reward belief on goal activation (e.g., process-focused self-improvement) by comparing the critical envy condition (e.g., benign envy) to the no emotion control condition and the alternative envy condition (e.g., malicious envy). Thus, each mediation analysis was conducted with a multicategorical predictor variable (i.e., emotion), in which the critical envy condition served as the reference group (Hayes 2018; Hayes and Preacher 2014). Consistent with hypothesis 1c (figure 1, boxes 1a–3a), the effect of benign envy on process-focused self-improvement motivation was mediated by the effort-determines-reward belief when compared to the control condition ( $B = -.14$ , 95% CI:  $-.33$  to  $-.01$ ) and malicious envy condition ( $B = -.28$ , 95% CI:  $-.56$  to  $-.04$ ). Consistent with hypothesis 2c (figure 1, boxes 1b–3c), the effect of malicious envy on outcome-focused self-improvement motivation was mediated by the effort-determines-reward belief when compared to the control condition ( $B = -.16$ , 95% CI:  $-.36$  to  $-.01$ ) and benign envy condition ( $B = -.30$ , 95% CI:  $-.61$  to  $-.03$ ).

## Discussion

Study 1 provides support for the claim that both facets of envy can motivate self-improvement behavior outside of the envy-eliciting domain. When people experienced benign envy, they preferred a process-focused approach to self-improvement (hypothesis 1a). When people experienced malicious envy, they preferred an outcome-focused approach to self-improvement (hypothesis 2a). Furthermore, the motivational orientation activated by each facet of envy was driven by the belief that effort does (does not) determine reward (hypotheses 1c and 2c).

## STUDY 2

Study 2 was designed to build on the study 1 findings in the following three ways. First, we wanted to examine whether the motivating effect of benign (malicious) envy on process-focused (outcome-focused) self-improvement influences product preferences (hypotheses 1b and 2b). We investigated this possibility using a smartphone app designed to improve academic performance. Critically, the app was framed to be consistent with a process-focused or outcome-focused self-improvement goal. Second, we wanted to provide evidence that the motivation to pursue a goal resulted in goal-directed behavior. Accordingly, participants' use of the app was measured. Third, we wanted to rule out competing mediating processes. It was possible that the two facets of envy elicited different construal levels (Trope and Liberman 2003). It could be that benign (malicious) envy elicits a concrete (abstract) construal that results in process-focused (outcome-focused) goal pursuit (Han, Duhachek, and Agrawal 2014, 2016). We also measured two additional mediators: self-efficacy and expectations of goal progress.

## Method

**Design and Participants.** The design was a 2 (emotion: benign envy vs. malicious envy)  $\times$  2 (product frame: process vs. outcome) between-subjects design. Participants were 325 undergraduate students (55% female,  $M_{\text{Age}} = 20.74$ ) from a US university who participated in exchange for course credit. This was the final sample after we excluded 16 participants, using the criteria discussed in study 1.

**Procedure.** Participants were told that they would participate in two unrelated studies. The first study served as the manipulation of emotion and consisted of a writing task that was similar to the one implemented in study 1. Participants in the benign (malicious) envy condition were asked to write about a time in which they were envious of another individual for something that was deserved (undeserved). However, unlike in the writing task in study 1, the instructions were modified to be open-ended so that the

participant could write about a variety of sources of benign (malicious) envy (see web appendix G for detailed methods and results verifying the effectiveness of this manipulation).

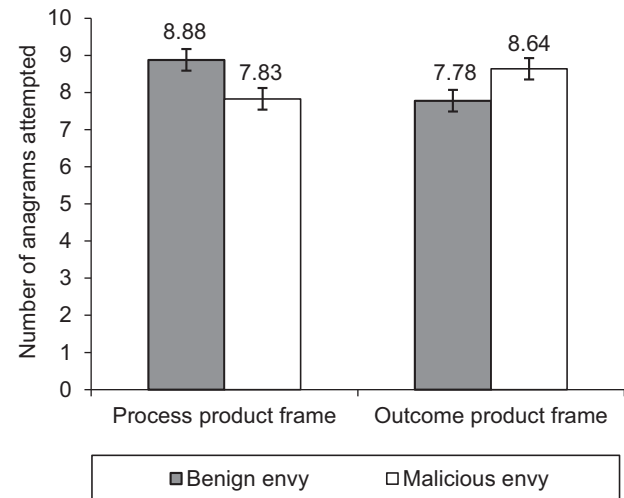
The second study was ostensibly a new product-testing task. Participants were told the experimenters were partnering with a smartphone application development company to have people try out a new app. The app contained a number of brain exercises designed to aid the pursuit of one's academic goals. After reading a summary of the app, participants were told that the company had conducted some preliminary focus group testing with university undergraduate students who had used the app. The focus group feedback varied depending on the product frame condition (see appendix A). In the process product frame condition, participants read that most users of the app felt that "the app helps people do the type of analytical thinking that is necessary for reaching their academic goals," whereas participants in the outcome product frame condition read that "the app helps people attain their academic goals." Participants also read that users of the app said that it "sharpens your mental acuity from performing the brain exercises necessary to improve academically" (process product frame condition) or "sharpens your mental acuity and makes you improve academically" (outcome product frame condition). Thus, the product description was framed to either emphasize how the product facilitated the effort invested in self-improvement or the reward provided from self-improvement.

Next, participants tested one of the app exercises. Participants read the instructions for one of the brain exercises named "word scrambles." The measure itself was an anagram task, adapted from Etkin and Ratner (2012), where participants were given 10 anagrams to solve (e.g., "iselm," which could be solved as "smile" or "limes"). The anagrams were presented one at a time in randomized order (see web appendix B for all experimental manipulations and measures). Participants were given 20 seconds to solve the anagram before being automatically advanced to the next trial. Participants could also elect to manually proceed to the next trial or to prematurely end the task. We assessed motivation by counting the number of anagrams attempted and correctly solved.

After completing the anagram task, participants responded to a series of items that measured potential mediating processes. To assess the accessibility of the belief in whether effort determines (does not determine) reward, participants responded to the same item from study 1: "What is your belief in the relationship between effort and reward? Do you feel that rewards in life are determined solely by effort or that rewards in life do not solely depend on effort?" (1 = Rewards solely depend on effort, 9 = Rewards do not solely depend on effort). Other potential mediators included (1) expectations of academic goal progress: "To what extent could this app help you make

FIGURE 3

STUDY 2 RESULTS (ERROR BARS SHOW 95% CONFIDENCE INTERVALS)



progress on your academic goals?" (1 = Very little, 9 = A great deal), (2) self-efficacy toward one's academic goals, measured with an adaptation of Han et al.'s (2016) three-item scale ( $\alpha = .91$ ; sample item: "To what extent could this app make you feel confident to pursue your academic goals?" 1 = Not at all, 9 = Very much), and (3) construal level: the 10-item Behavioral Identification Form (BIF), which was taken from Slepian, Masicampo, and Ambady (2015). The BIF asked participants to consider a behavior (e.g., "taking a test") and to select one of two possible responses that was more reflective of the given behavior. One response was always more concrete (e.g., "answering questions"), whereas the other response was always more abstract (e.g., "showing one's knowledge"). For each participant, the 10 responses were coded and then summed together (0–10), such that higher responses indicated a more concrete construal. Lastly, participants answered a few personality and demographic questions, including whether they currently held an academic goal, and were debriefed.

## Results

**Goal Pursuit.** An ANOVA on the number of anagrams attempted revealed a significant interaction between the emotion factor and the product frame factor ( $F(1, 321) = 10.77, p = .001, \hat{\omega}_p^2 = .029$ ; see figure 3). In the process product frame condition, participants attempted more anagrams in the benign envy ( $M = 8.88, SD = 2.35$ ) than the malicious envy ( $M = 7.83, SD = 2.97$ ;  $F(1, 321) = 6.63, p = .010, \hat{\omega}_p^2 = .017$ ) condition. In the outcome product frame condition, participants attempted more



anagrams in the malicious envy ( $M = 8.64$ ,  $SD = 2.35$ ) than the benign envy ( $M = 7.78$ ,  $SD = 2.72$ ;  $F(1, 321) = 4.30$ ,  $p = .039$ ,  $\hat{\omega}_p^2 = .010$ ) condition.

An ANOVA on the number of anagrams correctly solved revealed a significant interaction between the emotion factor and the product frame factor ( $F(1, 321) = 9.08$ ,  $p = .003$ ,  $\hat{\omega}_p^2 = .024$ ). In the process product frame condition, participants solved more anagrams in the benign envy ( $M = 5.13$ ,  $SD = 2.32$ ) than the malicious envy ( $M = 4.11$ ,  $SD = 2.42$ ;  $F(1, 321) = 8.12$ ,  $p = .005$ ,  $\hat{\omega}_p^2 = .022$ ) condition. In the outcome product frame condition, participants solved more anagrams in the malicious envy ( $M = 4.93$ ,  $SD = 2.06$ ) than the benign envy condition, although this difference was not significant ( $M = 4.40$ ,  $SD = 2.47$ ;  $F(1, 321) = 2.05$ ,  $p = .153$ ).

**Mediation Analyses.** An ANOVA assessing the belief in whether effort determines (does not determine) reward revealed a significant main effect of the emotion factor ( $F(1, 321) = 16.79$ ,  $p < .001$ ,  $\hat{\omega}_p^2 = .047$ ), such that participants in the benign (malicious) envy condition were more likely to believe that effort determines (does not determine) reward ( $M_{\text{benign envy}} = 4.33$ ,  $SD = 2.28$ ,  $M_{\text{malicious envy}} = 5.41$ ,  $SD = 2.49$ ). Neither the product frame factor nor the interaction was significant (both  $F$ s  $< 1$ ). An ANOVA on the expectations of goal progress measure did not reveal a significant effect of the emotion factor ( $F < 1$ ), product frame factor ( $F < 1$ ), or their interaction ( $F < 1$ ). An ANOVA on the perceived self-efficacy measure also did not reveal a significant effect of the emotion factor ( $F < 1$ ), product frame factor ( $F(1, 321) = 1.68$ , NS), or their interaction ( $F < 1$ ). An ANOVA on the construal measure revealed a significant main effect of the emotion factor ( $F(1, 321) = 6.83$ ,  $p = .009$ ,  $\hat{\omega}_p^2 = .018$ ), such that participants in the benign (malicious) envy condition were more likely to indicate having a concrete (abstract) construal ( $M_{\text{benign envy}} = 4.96$ ,  $SD = 2.31$ ,  $M_{\text{malicious envy}} = 4.27$ ,  $SD = 2.40$ ). Neither the product frame factor nor the interaction was significant (both  $F$ s  $< 1$ ).

A mediation analysis was conducted using PROCESS model 15 (Hayes 2018), whereby the 95% CIs used to generate each indirect effect were performed using 5,000 bootstrap samples. PROCESS model 15 is a moderated mediation model (similar to model 8) with the moderator (figure 1, boxes 4a and 4b) influencing the indirect path post-mediator (figure 1, boxes 2a and 2b). The mediation analysis assessed if the effect of emotion on goal pursuit (as indicated by the number of anagrams attempted) was driven by the effort-reward belief and moderated by product framing. Consistent with our prediction, the effect of emotion on goal pursuit was moderated by product frame and mediated by the belief in whether effort determines reward ( $B = .38$ , 95% CI: .11 to .82), but not mediated by goal progress ( $B = .01$ , 95% CI,  $-.09$  to .27), self-efficacy ( $B = .01$ , 95% CI,  $-.15$  to .22), or construal level ( $B = .01$ ,

95% CI,  $-.17$  to .19). Specifically, the belief in whether effort does (does not) determine reward mediated the effect of emotion on goal pursuit when the product was process-framed ( $B = -.20$ , 95% CI,  $-.51$  to  $-.02$ ) or outcome-framed ( $B = .18$ , 95% CI, .01 to .45). Web appendix I discusses similar results when the number of anagrams correctly solved was the dependent variable.

## Discussion

Study 2 provides additional insight into the underlying process responsible for the influence of benign and malicious envy on goal pursuit. Benign envy increased the preference for a product framed to be consistent with process-focused goal pursuit, a relationship mediated by the belief that effort determines whether people are rewarded. Malicious envy increased the preference for a product framed to be consistent with outcome-focused goal pursuit, a relationship mediated by the belief that effort does not determine whether people are rewarded. The results were not mediated by goal progress, self-efficacy, or construal level, despite finding that benign (malicious) envy encouraged a concrete (abstract) construal. This may be because the belief about the relationship between effort and reward is more directly tied to the motivational orientations of each type of envy.

There is one important alternative explanation for the findings in studies 1 and 2. An emotional experience consists of two parts: the actual emotional experience (i.e., emotion) and the appraisal information that accompanies the experience (i.e., cognition). It is possible that the responses in studies 1 and 2 were driven solely by the deservingness appraisal information, not the combination of this information and the emotional experience. To address this issue, a conceptual replication of study 2 was performed with an added trust-in-emotions manipulation (Avnet, Pham, and Stephen 2012) in a  $2 \times 2 \times 2$  between-subjects design. The results in the high trust-in-emotions condition replicated the results of study 2, but the results in the low trust-in-emotions condition showed no influence of the product frame in each envy condition. The methods and results of this study, reported in web appendixes E and F, respectively, provide support for the claim that an emotional experience is necessary (see figure 1, boxes 1a and 1b) to observe the influence of benign and malicious envy on goal pursuit.

## STUDY 3

Study 3 sought to provide additional evidence for the claim that benign (malicious) envy encourages process-focused (outcome-focused) goal pursuit. Thus far, we have used responses to different product frames to infer whether the pursuit of the self-improvement goal was process-focused or outcome-focused; that is, product descriptions

varied in whether effort information or reward information was emphasized. In study 3, all products were described using effort and reward information. Across conditions, the effort and reward components were orthogonally manipulated, so that (1) the effort could be emphasized or not and (2) the reward could be emphasized or not. In the case of benign envy, we predicted that people should be more sensitive to the manipulation of the effort component of a product (see figure 1, box 4a). In the case of malicious envy, we predict that people should be more sensitive to the manipulation of the reward component of a product (see figure 1, box 4b). Hence, the predictions were consistent with hypotheses 1b and 2b, except that the means (i.e., products) were manipulated rather than the goals.

## Method

**Design and Participants.** The design was a 2 (emotion: benign envy vs. malicious envy)  $\times$  2 (effort: emphasized vs. not)  $\times$  2 (reward: emphasized vs. not) between-subjects design. Participants were 355 undergraduate students (40% female,  $M_{Age} = 20.12$ ) from a US university who participated in exchange for course credit. This was the final sample after we excluded 21 participants, using the criteria discussed in study 1.

**Procedure.** Participants were told that they would participate in two unrelated studies. The first study consisted of the same writing task used in study 2 and served as the manipulation of benign versus malicious envy (see web appendix C for all experimental manipulations and measures). The second study involved an evaluation of the same app used in the study 2 procedure. The procedure was similar to study 2, except for the feedback focus groups provided about the app (see appendix B). Focus group feedback was used to manipulate whether or not the app was (1) effortful (effort emphasized vs. not) and (2) rewarding (reward emphasized vs. not). In the effort emphasized condition, the app was rated 8.5 out of 10 on effort and the feedback indicated that “each mental exercise is challenging and requires you to put in work in order to complete them.” Conversely, in the effort not emphasized condition, the app was rated 7 out of 10 on effort and the feedback indicated that “while some of the mental exercises are challenging, many exercises are also pretty easy.” In the reward emphasized condition, the app was rated 8.5 out of 10 on reward and feedback indicated that students “have benefited considerably in terms of improvements to their academic life.” Conversely, in the reward not emphasized condition, the app was rated 7 out of 10 on reward and the feedback indicated that students “have benefited moderately in terms of improvements to their academic life.” Thus, depending on condition, participants received feedback in which both effort and reward were

emphasized, only effort was emphasized, only reward was emphasized, or neither effort nor reward was emphasized.

After participants read the description, we measured their desirability for the smartphone app using three items ( $\alpha = .91$ ) adapted from Griskevicius et al. (2010): “How desirable do you find this smartphone app?” (1 = Not at all desirable, 9 = Very desirable), “How willing are you to gather more information about this smartphone app?” (1 = Not at all willing, 9 = Very willing), and “Would you consider using this smartphone app?” (1 = Not at all, 9 = Definitely). Next, participants answered a few personality and demographic questions, including whether they currently held an academic goal, and were debriefed.

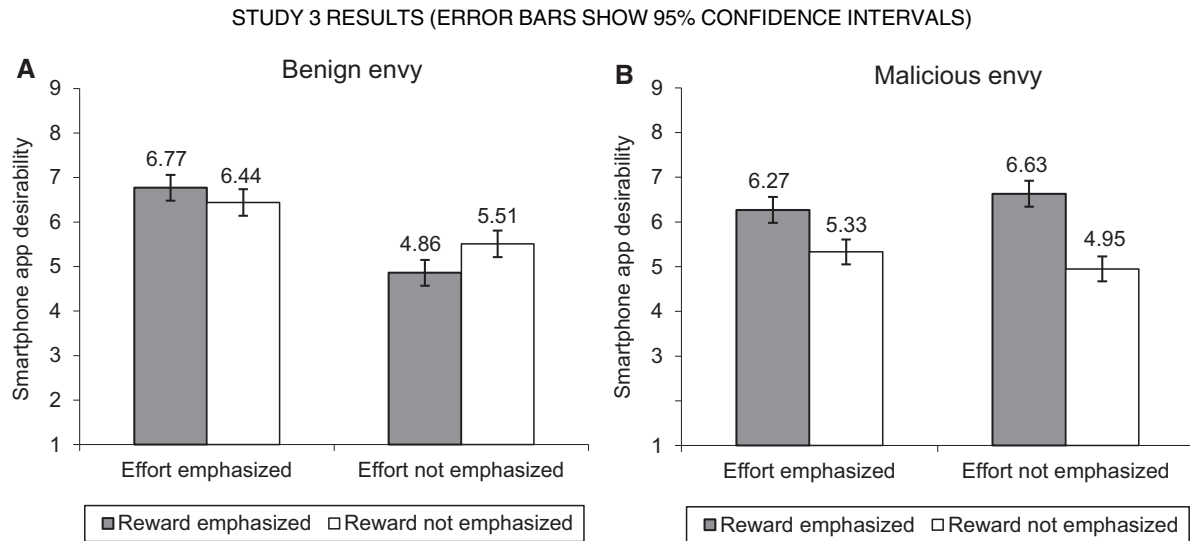
## Results

**Smartphone App Desirability.** An ANOVA tested the predictions of a main effect of the effort factor in the benign envy condition and a main effect of the reward factor in the malicious envy condition. First, there was an interaction of the emotion, effort, and reward factors ( $F(1, 347) = 4.36, p = .038, \hat{\omega}_p^2 = .001$ ). Second, there was an interaction of the emotion and effort factors ( $F(1, 347) = 11.67, p = .001, \hat{\omega}_p^2 = .030$ ; see figure 4). As predicted, participants in the benign envy condition were more interested in the app when effort was emphasized ( $M = 6.60, SD = 1.88$ ) versus not ( $M = 5.18, SD = 2.07$ ;  $F(1, 347) = 23.25, p < .001, \hat{\omega}_p^2 = .060$ ), whereas participants in the malicious envy condition expressed similar interest regardless of emphasis ( $M_{\text{effort emphasized}} = 5.80, SD = 1.82, M_{\text{effort not emphasized}} = 5.79, SD = 2.17$ ;  $F < 1$ ). Third, there was an interaction of the emotion and reward factors ( $F(1, 347) = 12.63, p < .001, \hat{\omega}_p^2 = .032$ ; see figure 4). As predicted, participants in the malicious envy condition were more interested in the app when the reward was emphasized ( $M = 6.45, SD = 1.88$ ) versus not ( $M = 5.14, SD = 1.92$ ;  $F(1, 347) = 20.53, p < .001, \hat{\omega}_p^2 = .053$ ), whereas participants in the benign envy condition expressed similar interest regardless of emphasis ( $M_{\text{reward emphasized}} = 5.82, SD = 2.21, M_{\text{reward not emphasized}} = 5.97, SD = 1.97$ ;  $F < 1$ ).

## Discussion

Study 3 provides further support for the notion that the effect of each facet of envy on motivation is driven by a process-focused versus outcome-focused approach to self-improvement. People experiencing benign envy were sensitive to changes to the effort associated with using a product, whereas people experiencing malicious envy were sensitive to changes in the rewards from using a product. These results are consistent with the claim that benign envy encourages process-focused self-improvement and malicious envy encourages outcome-focused self-improvement.

FIGURE 4



## STUDY 4

Study 4 was designed with two goals in mind. First, we sought to manipulate envy in a manner that was more viscerally experienced (Kristofferson et al. 2018; Van de Ven et al. 2011a). To achieve this, we had participants watch a video of a peer discussing how they won a summer vacation sweepstakes promotion, thereby allowing us to confirm that naturally experienced envy motivates behavior. Second, our process account proposes that the accessibility of beliefs about whether effort determines (does not determine) reward is responsible for a process-focused or outcome-focused approach to self-improvement (see figure 1). If this is so, we should be able to manipulate the relevance of these beliefs and, consequently, whether a process focus or outcome focus accompanies the goal to self-improve. Consistent with this account, we manipulated a consumer's mindset toward self-improvement to either be malleable through effort (i.e., growth mindset) or immutable regardless of effort (i.e., fixed mindset; Murphy and Dweck 2016). We anticipated that a growth mindset, but not a fixed mindset, would allow benign envy to encourage self-improvement using process-framed products (hypothesis 3a). We also anticipated that a fixed mindset, but not a growth mindset, would allow malicious envy to encourage self-improvement using outcome-framed products (hypothesis 3b).

## Method

**Design and Participants.** The design was a 2 (emotion: benign envy vs. malicious envy)  $\times$  2 (consumer mindset: growth vs. fixed)  $\times$  2 (product frame: process vs. outcome)

between-subjects design. Participants were 295 undergraduate students (55% female,  $M_{\text{Age}} = 20.54$ ) from a US university who participated in exchange for course credit. This was the final sample after we excluded 13 participants. Since no writing task was used in this study (see procedure below), only the second exclusion criterion from study 1 was applied (i.e., not having the goal under examination).

**Procedure.** Participants were told that they would take part in three unrelated studies. The first study was purportedly related to a story being put together by the university's student magazine. In reality, the study served as our manipulation of envy (adapted from Van de Ven et al. 2011a). Participants began by reading that the magazine approached several students at the university and interviewed them about their summer vacation plans. Participants were then told that they would watch a video of one interview and then answer some questions about the interview. The supposed purpose of this exercise was to help the student magazine figure out which students had the most interesting summer vacation plans so they could be featured in an upcoming story.

After reading the instructions, participants watched a video interview of a student named Alex, who was played by either a female or a male confederate of the participant's gender. This was done because prior research shows that perceived similarity (e.g., same gender) strengthens an envy response (Van de Ven et al. 2011a). In the interview, Alex revealed that s/he had recently won an all-expense paid trip to Cabo San Lucas through a summer vacation sweepstakes offered by JusCollege (a real company that offers travel experiences for college students). Alex then

described what the vacation package included (e.g., free flight and hotel, complementary food and alcohol) before being asked about the details of the promotion. Alex then explained that in order to enter into the sweepstakes, students had to submit a short essay explaining why they needed a vacation and that JusCollege selected the winner based on who deserved it the most. At this point, the interviewer asked Alex how s/he won the sweepstakes. Critically, Alex's explanation varied by condition (see web appendix D for all experimental manipulations and measures).

In the benign envy condition, Alex's explanation revolved around how s/he had been working two jobs, attending classes full-time, and participating in extracurricular activities. In this case, we expected that participants would be more likely to infer that Alex's vacation was deserved. In the malicious envy condition, Alex's explanation also revolved around working two jobs, attending classes full-time, and participating in extracurricular activities. However, the manner in which Alex said this information suggested that it was disingenuous (Alex was embellishing the extent to which s/he was involved in work, school, and extracurricular activities). In this case, we expected that participants would infer that Alex's vacation was not deserved. Across both envy conditions, the videos were nearly identical in length (two minutes), with the only difference being the explanation provided for winning (see web appendix G for detailed methods and results verifying the effectiveness of this manipulation). To maintain the initial cover story, after watching the video, participants answered a couple of questions about how interesting Alex's vacation plans were.

The second study consisted of reading an article that served as our consumer mindset manipulation. Following Kwon and Nayankuppam (2015), participants were shown an article about some research findings that evoked either a growth mindset or a fixed mindset. In the growth mindset condition, participants read that people's abilities "are basically a bundle of potentialities that wait to be developed and cultivated" and that "no one's character is hard, like a rock that cannot be changed. Only for some, greater effort and determination are needed to effect changes." By contrast, participants in the fixed mindset condition read that people's abilities "seem to be rather fixed and to develop consistently along the same path over time" and that "in most of us, by the age of ten, our character has set like plaster and will never soften again." To ensure that participants understood the main point of the article, they answered a single multiple-choice question asking them to indicate which answer best summarized the article (if participants answered incorrectly, they were shown the correct answer before continuing).

The third study consisted of a product evaluation task and served as the product frame manipulation. The instructions stated that the researchers were partnering with a

health products company to gather people's impressions of a new supplement. The supplement was described as "helping people while they perform complex tasks necessary for reaching their productivity goals" (process product frame condition) or "helping people attain their productivity goals" (outcome product frame condition). Participants were told that the marketing department had a number of samples of the supplement that would be distributed via a raffle. The instructions stated participants could obtain tickets for the raffle by participating in a separate product evaluation study. The instructions also stipulated that for every product that was evaluated, one ticket would be entered into the raffle on behalf of the participant. Thus, the number of products evaluated served as our behavioral measure of goal pursuit.

## Results

**Goal Pursuit.** We anticipated that a growth mindset, but not a fixed mindset, would allow us to observe an influence of benign envy on the motivation to pursue a self-improvement goal when the supplement had a process product frame. Thus, we should observe an interaction of the consumer mindset and the product frame factors in the benign envy condition. We also anticipated that a fixed mindset, but not a growth mindset, would allow us to observe an influence of malicious envy on the motivation to pursue a self-improvement goal when the supplement had an outcome product frame. Thus, we should observe an interaction of the consumer mindset and the product frame factors in the malicious envy condition.

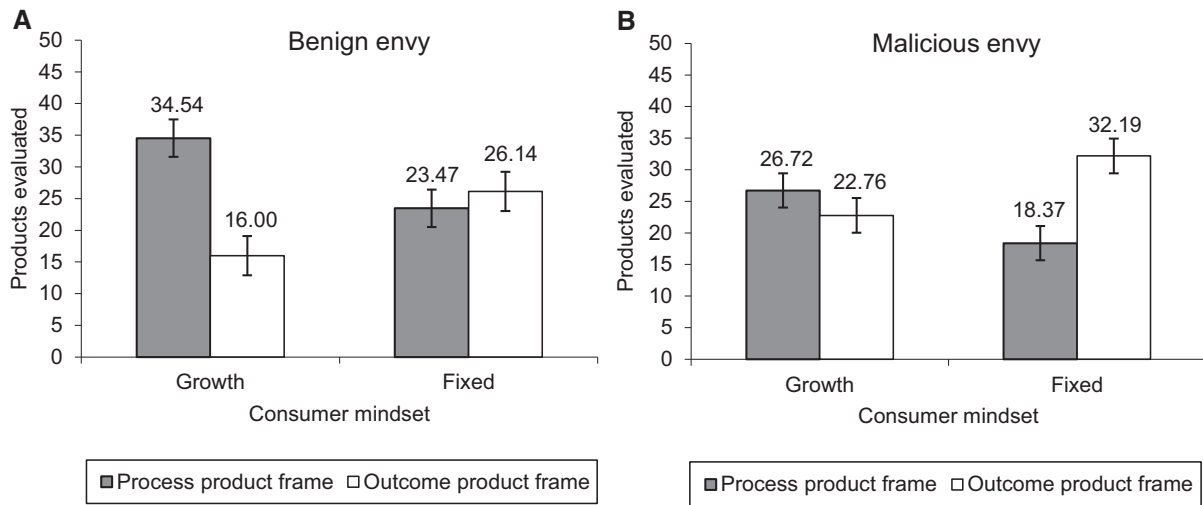
In the benign envy condition, there was a significant interaction between the consumer mindset and product frame factors ( $F(1, 287) = 14.25, p < .001, \hat{\omega}_p^2 = .044$ ; see figure 5a). In the growth mindset condition, participants evaluated more products in the process product frame ( $M = 34.54, SD = 16.38$ ) compared to the outcome product frame condition ( $M = 16.00, SD = 15.44; F(1, 287) = 19.82, p < .001, \hat{\omega}_p^2 = .061$ ). In the fixed mindset condition, there was no influence of product frame on the number of products evaluated ( $M_{\text{process}} = 23.47, SD = 16.29, M_{\text{outcome}} = 26.14, SD = 16.53; F < 1$ ). Looked at differently, participants with a growth mindset evaluated more products when the productivity supplement had a process product frame ( $F(1, 287) = 6.97, p = .009, \hat{\omega}_p^2 = .020$ ), but fewer products when the productivity supplement had an outcome product frame ( $F(1, 287) = 5.37, p = .021, \hat{\omega}_p^2 = .015$ ).

In the malicious envy condition, there was a significant interaction between the consumer mindset and product frame factors ( $F(1, 287) = 9.43, p = .003, \hat{\omega}_p^2 = .057$ ; see figure 5b). In the fixed mindset condition, participants evaluated a greater number of products in the outcome product frame ( $M = 32.19, SD = 18.42$ ) compared to the process product frame condition ( $M = 18.37, SD = 17.72$ ;



FIGURE 5

STUDY 4 RESULTS (ERROR BARS SHOW 95% CONFIDENCE INTERVALS)



$F(1, 287) = 13.37, p < .001, \hat{\omega}_p^2 = .029$ ). In the growth mindset condition, there was no influence of product frame on the number of products evaluated ( $M_{\text{process}} = 26.72, SD = 17.75, M_{\text{outcome}} = 22.76, SD = 19.73; F < 1$ ). Looked at differently, participants with a fixed mindset evaluated more products when the productivity supplement had an outcome product frame ( $F(1, 287) = 5.84, p = .016, \hat{\omega}_p^2 = .011$ ), but fewer products when the productivity supplement had a process product frame ( $F(1, 287) = 4.69, p = .031, \hat{\omega}_p^2 = .009$ ).

## Discussion

Study 4 provides further support to the hypothesis that the divergent effects of benign and malicious envy on the pursuit of self-improvement goals are driven by differences in the accessibility of the beliefs that effort (does not) determine rewards. We found that the motivating effect of benign and malicious envy on process- and outcome-focused goal pursuit was most likely to occur when the consumer mindset (i.e., growth, fixed) toward self-improvement fit with the facet of envy. These results are consistent with the functionalist perspective of emotions and the notion that emotion-based goal pursuit can be influenced by contextual factors (Campos et al. 1994; Frijda 2005; Witherington and Crichton 2007).

## GENERAL DISCUSSION

Prior research on the multifaceted nature of envy has focused on determining its antecedents, while only recently beginning to look at its downstream consequences for

behavior (Crusius and Lange 2014; Van de Ven et al. 2011a). With respect to the question of how envy might impact goal pursuit, the scant research on this topic would suggest that benign envy is motivating whereas malicious envy is not (Lange and Crusius 2015a; Van de Ven et al. 2011b). However, to conclude that only one facet of envy leads to adaptive responses runs counter to functionalism and the idea that all facets of emotion serve an adaptive purpose (Keltner and Gross 1999). We show that benign and malicious envy each have the potential to motivate goal pursuit. Across four studies, we show that (1) both benign and malicious envy have the potential to motivate goal pursuit in domains outside the envy-eliciting domain, (2) benign (malicious) envy promotes the pursuit of self-improvement goals that are process-focused (outcome-focused), (3) the different motivational orientations of each envy type results from a belief that effort determines (does not determine) whether people are rewarded, and (4) the influence of each facet of envy is sensitive to whether people hold a growth versus a fixed mindset.

## Theoretical Contributions

*Envy.* Although envy has been a longstanding topic of philosophical discussion (Nietzsche 1967; Rand 1971/1999), empirical research on envy is a more recent development (Crusius and Lange 2014; Falcon 2015; Van de Ven et al. 2009, 2011a). To date, the bulk of empirical investigations highlight the detrimental consequences of envy (Smith and Kim 2007), leaving a dearth of research on the potentially positive consequences of envy. Only after the multifaceted nature of envy was documented has

research identified some benefits of envy, although these adaptive outcomes have been assumed to be specific to benign envy (Lange and Crusius 2015a; Van de Ven et al. 2011b). In the current research, we demonstrate that both benign and malicious envy encourage the pursuit of self-improvement goals outside the domain of the envy experience. In doing so, we provide a more nuanced understanding of the motivational dynamics of benign and malicious envy.

*Goals.* Prior goals research has demonstrated that the same goal can be represented in a manner that focuses on either the process or the outcome of the goal (Touré-Tillery and Fishbach 2011, 2018). Research that has examined these two unique approaches to goal pursuit has focused primarily on understanding how each type of motivational orientation shapes people's evaluations, perceptions, and behaviors related to a given goal (Touré-Tillery and Fishbach 2014). However, less is understood about what factors determine when people are more likely to engage in process-focused versus outcome-focused goal pursuit. Our research identifies emotion as a determinant of each motivational orientation by demonstrating that benign envy (malicious envy) encourages the pursuit of goals that are process-focused (outcome-focused).

*Self-Conscious Emotions and Goals.* This research contributes to self-conscious emotions research by showing how the multifaceted property of emotions can be used to understand when and why envy has different effects on goal pursuit. Specifically, we show that benign (malicious) envy motivates goal pursuit that is process-focused (outcome-focused). However, we take one additional step by demonstrating that these different motivational orientations are a consequence of different beliefs generated by each emotion. In doing so, we provide one possible approach to exploring how other self-conscious emotions might shape goal pursuit. For instance, guilt has been found to be experienced from appraisal information pertaining to action (i.e., guilt about what the person did) or inaction (i.e., guilt about what the person did not do; Han et al. 2014). When guilt is experienced due to inaction, the emotion could generate the belief that something needs to be done to make up for what one failed to do previously. Therefore, it may be the case that goal pursuit is strongest when means are framed as process-focused because it signals an opportunity for action. However, when guilt is due to action, the emotion could generate the belief that future actions may bring about further negative consequences. As a result, it may be that goal pursuit is strongest when means are framed as outcome-focused, because it conveys a sense of certainty that goal fulfillment will bring about positive consequences. Thus, by considering the interaction between appraisal information and emotion-generated beliefs on goal pursuit, researchers will obtain a more systematic understanding of the influence of self-conscious emotions.

*Emotion/Goal Interface.* This article also contributes to our understanding of how emotion interacts with goal states to shape behavior. Prior research examining the goal-emotion relationship has focused on emotion as an antecedent or consequence of goal pursuit. For example, research on emotion as an antecedent to goal pursuit shows how people are more (less) motivated to pursue an active goal when they have a preexisting positive (negative) emotional reaction toward the goal (Fishbach, Shah, and Kruglanski 2004). Research on emotion as a consequence of goal pursuit shows how the achievement (failure) of a goal can lead to positive (negative) emotion (Laran 2010; Soman and Cheema 2004). Only recently has research begun to examine how goals and emotion may jointly influence goal-directed behaviors, although prior investigations have been limited to understanding how the pursuit of active goals is modified by different emotions (Louro, Pieters, and Zeelenberg 2007; Salerno et al. 2015). For instance, when a self-improvement goal is active, happiness encourages goal pursuit because it signals goal adoption, whereas sadness discourages goal pursuit because it signals goal rejection (Fishbach and Labroo 2007). Our findings extend this work by showing that emotions can initiate, in addition to modify, goal states. In doing so, this research demonstrates that an emotion influences not only the extent to which a goal is active (e.g., self-improvement) but also the manner in which the goal is pursued (e.g., process-focused, outcome-focused).

## Limitations and Future Directions

The scope of the current research was limited to examining the motivation to pursue self-improvement goals in situations that fell outside of the domain of the self-other discrepancy that created the envy. Yet one may wonder whether people prefer to respond to envy by addressing the self-other discrepancy within the domain where the envy occurred. Said differently, is there a default response as to what domain people seek to address the self-other discrepancy created by envy?

A recent review article by Mandel and colleagues (2017) sheds light on this issue. They present a compensatory consumer behavior model for how consumers respond to self-other discrepancies. On the one hand, the authors point out that, indeed, one of the primary strategies that people employ involves engaging in behavior that directly resolves the discrepancy source. This compensatory strategy is known as *direct resolution*, and would suggest that people who experience benign and malicious envy may prefer to address a self-other discrepancy within the envy-eliciting domain. On the other hand, the authors highlight that it is oftentimes the case that little can be done to directly address the source of the discrepancy. This is frequently the case with benign and malicious envy and explains why both facets of envy are accompanied by a sense of

frustration (Crusius and Lange 2014; Lange and Crusius 2015a). When this occurs, a common strategy is to engage in behavior that reinforces the self in areas that are different from the domain of the discrepancy, and in doing so, indirectly addresses the discrepancy. This compensatory strategy is known as *fluid compensation*. Our findings are consistent with this latter approach.

Despite ample research demonstrating the use of these discrepancy-reducing strategies, little is known about when people favor one strategy over the other. In fact, Mandel and colleagues (2017, 141) list this as their primary direction for future research: “Our review of the literature provides consistent evidence that self-discrepancies can affect consumer behavior. However, at this point we know far less about when each of the documented compensatory consumer behavior strategies occurs.” With respect to the regulation of benign and malicious envy, we suspect that the strategy one prefers depends not only on whether one perceives that the self-other discrepancy can be directly addressed, but also on other moderating factors. For instance, self-esteem might impact whether people respond to each facet of envy by engaging in direct resolution versus fluid compensation. Those with high self-esteem might be more committed to opportunities that directly resolve the discrepancy, whereas those with low self-esteem might be more likely to forego direct resolution in favor of fluid compensation, owing to the need to limit further damage to one’s self-view (Kristofferson et al. 2018). We also suspect that the relationship between the envious individual and the envied target could influence the strategy selected. For instance, research has shown that thinking about competitive rivalries leads people to pursue goals in a more eager and less cautious manner (Converse and Reinhard 2016). This suggests that those who are envious of someone they consider a rival might be more willing to seek out direct resolution, whereas those who are envious of a nonrival might engage in fluid compensation.

A related question pertains to whether addressing envy through the use of one strategy would then eliminate the motivational drive to engage in another strategy. For instance, people who experience malicious envy directly address the self-other discrepancy by attempting to pull the envied individual down (Van de Ven et al. 2009, 2011a, 2011b). When this occurs, would the envied individual still be motivated to pursue self-improvement goals outside the envy-eliciting domain? The question is intriguing, as one can imagine numerous possibilities depending on the theoretical perspective that is taken. From an emotion regulation perspective (Gross 1998), successfully pulling the envied individual down should make the envious person feel better. This suggests that the person may no longer feel the need to self-improve. However, from a goals perspective, successfully pulling the envied individual could also be interpreted in terms of attaining the denigration goal. One of the fundamental properties of goal pursuit is

that once a focal goal is completed, people become more motivated to tend to other important goals (van Osselaer and Janiszewski 2012), suggesting that the motivational drive to self-improve would remain. Future research could investigate these possibilities.

## Conclusion

Prior research assumes that envy is maladaptive to consumer well-being. Pollay (1986) discussed how envy can be destructive for our society because it encourages materialism, and Belk (1985) associated envy with negative life satisfaction. Other deleterious effects of envy have been documented for people’s social skills (Baumel and Berant 2015), impulsiveness (Crusius and Mussweiler 2012), and information processing (Hill, DelPriore, and Vaughan 2011). Only after the benign and malicious facets of envy were documented has envy been considered adaptive, most notably with benign envy encouraging self-improvement in the domain that caused the envy (Van de Ven et al. 2009, 2011a). Our research extends this prior work by showing that both benign and malicious envy can be adaptive within the context of self-improvement goal pursuit outside the domain that caused the envy. Our findings highlight the importance of examining the behavioral responses to emotions in different contexts, as without doing so, we risk not having a full understanding of how emotions can be leveraged to enhance consumer well-being.

## DATA COLLECTION INFORMATION

The first author collected data using participants from Amazon’s Mechanical Turk (study 1) in the spring of 2018. All three authors supervised the collection of data by research assistants using participants from the University of Cincinnati (study 3, study 4), University of Florida (study 2), and the University of Miami (web appendix study 1), between the spring of 2016 and the spring of 2018. The first author was primarily responsible for the data analysis with supervision and input from the second and third authors. Data were discussed throughout the entire research agenda by all authors.

## APPENDIX A

### PRODUCT FRAME MANIPULATIONS (STUDY 2)

*Process Product Frame Condition.* Through initial focus group testing, Mindware determined that most users feel that *the app helps people do the type of analytical thinking that is necessary for reaching their academic goals*. Users have said that the app works by providing users with a platform that *sharpens your mental acuity from performing the brain exercises necessary to improve academically*.

*Outcome Product Frame Condition.* Through initial focus group testing, Mindware determined that most users feel that *the app helps people attain their academic goals*. Users have said that the app works by providing users with a platform that *sharpens your mental acuity and makes you improve academically*.

## APPENDIX B

### EFFORT AND REWARD MANIPULATIONS (STUDY 3)

*Effort Manipulations (Participants Saw One of the Two Versions Below).*

Effort Emphasized Condition.

**App Feature 1:** How *challenging* was the app to the user? This refers to how much effort the exercises involve. Results show that on average, users gave the Mind Booster app an *8.5/10 rating* on the challenge dimension (where a 1 = not at all challenging and a 10 = very challenging). When asked to elaborate, other users indicated that *each mental exercise is challenging and requires you to put in work in order to complete them*.

Effort Not Emphasized Condition.

**App Feature 1:** How *challenging* was the app to the user? This refers to how much effort the exercises involve. Results show that on average, users gave the Mind Booster app a *7/10 rating* on the challenge dimension (where a 1 = not at all challenging and a 10 = very challenging). When asked to elaborate, other users indicated that *while some of the mental exercises are challenging, many exercises are also pretty easy*.

*Reward Manipulations (Participants Saw One of the Two Versions Below).*

Reward Emphasized Condition.

**App Feature 2:** How *rewarding* was the app for the user? This refers to how the app makes students perceive their academic life to be going. Results show that on average, users gave the Mind Booster app an *8.5/10 rating* on the reward dimension (where a 1 = not at all rewarding and a 10 = very rewarding). When asked to elaborate, other users indicated that *they have benefited considerably in terms of improvements to their academic life*.

Reward Not Emphasized Condition.

**App Feature 2:** How *rewarding* was the app for the user? This refers to how the app makes students perceive their academic life to be going. Results show that on average, users gave the Mind Booster app a *7/10 rating* on the reward dimension (where a 1 = not at all rewarding and a 10 = very rewarding). When asked to elaborate, other users indicated that *they have benefited moderately in terms of improvements to their academic life*.

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