

May the Best Man Lose:
Guilt Inhibits Competitive Motivation

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Abstract

Both guilt and competition motivate goal achievement. Guilt increases task motivation, but also enhances prosocial goals. Competition motivates individual success, but its zero-sum nature makes personal and prosocial goals mutually exclusive. This work explores the relationship between guilt, competition and goal-achievement motivation. In five experiments, guilt was associated with higher motivation to achieve individual goals, but its effect on this motivation in competitive settings was negative. Unlike guilt, shame, the emotion most closely related to it, did not affect competitive motivation. The studies identify a conflict between personal and prosocial goals, both activated by guilt, as the cause for reduced competitive motivation. When outperforming others did not harm their interests, or when competitive achievement could also benefit others, the motivation of guilty competitors returned to its typical high level. The results demonstrate the power of emotions and competitive incentives on goal-directed behavior.

May the Best Man Lose: Guilt Inhibits Competitive Motivation

Arete is a Greek term, today commonly referred to as the ideal of excellence. The way to achieve *arete* in ancient Greece was through competition. The Greeks viewed competition as an outlet for one's virtues, and victory as a sign of divine favor (Bronson & Merryman, 2013; Hubbard, 2008). In modern times, a common way of achieving virtue is by experiencing or anticipating moral emotions, such as guilt. Guilt is a virtue-promoting emotion that facilitates the achievement of positive outcomes for the self and others (Haidt, 2003; Tangney, 1995). It increases work intensity and commitment to achieve personal goals (Flynn & Schaumberg, 2012; Frank, 1988), and promotes prosocial behavior that helps achieve interpersonal goals (Baumeister, Stillwell, & Heatherton, 1994). Yet, in competition, an inherent contradiction emerges between one's individual and interpersonal goals, which may make guilt incompatible with competitive accomplishment. The present research investigates the relationship between the effects of guilt and competition on goal-achievement motivation.

Guilt Promotes Goal Achievement

Guilt belongs to the family of self-conscious moral emotions, together with shame and embarrassment (Haidt, 2003). It is an unpleasant emotion that typically arises when individuals perceive their behavior as having violated a moral standard or having caused harm to others (Nelissen, 2014; Tangney, 1991). Although its immediate experience is negative, guilt serves various functions for the self. Feelings of guilt are associated with a strong sense of personal responsibility (Tangney, 1991). They foster a sense of efficacy and commitment to long-term goals, and enhance engagement in problem solving (Frank, 1988; Tangney & Dearing, 2002). Whereas feelings of shame cause people to shrink away from problems (hoping they will just go away), guilt feelings prompt people to address problems (hoping they can be solved; Schaumberg & Flynn, 2012). At work, for example, guilt can result in higher employee output (Brockner, Davy, & Carter, 1985; Brockner et al., 1986; Grant & Wrzesniewski, 2010).

The relationship between guilt and the pursuit of positive personal outcomes is also present for the trait-level tendency to anticipate the emotion, known as guilt proneness. Similarly to experienced guilt, guilt proneness is linked to increased goal-directed effort. For example, employees with higher guilt

prone individuals exhibit high levels of organizational commitment and report greater work intensity (Flynn & Schaumberg, 2012; Wiltermuth & Cohen, 2014). After failing to complete a task properly, highly guilt-prone individuals respond with a sense of urgency about taking action (Harder & Lewis, 1987). Guilt proneness correlates with perspective-taking and empathic concern, and increases the aversion to disappointing others (Flynn & Schaumberg, 2012; Leith & Baumeister, 1998). As a result, guilt-prone employees feel motivated to exhibit high levels of effort to complete their tasks and do their jobs properly, and refrain from engaging in counterproductive work behaviors, to prevent themselves from disappointing their coworkers (Cohen, Panter, & Turan, 2013; Flynn & Schaumberg, 2012).

By increasing task effort, high guilt proneness makes individuals sought-after coworkers (Wiltermuth & Cohen, 2014). It enables them to benefit from cooperative relationships and positive peer ratings, which in turn, translate into improved work outcomes (Baumeister et al., 1994; Bohns & Flynn, 2013; Nelissen, Breugelmans, & Zeelenberg, 2013). Consequently, guilt proneness makes candidates for employment more suitable for the job they seek (Cohen, Kim, Jordan, & Panter, 2016), and increases the likelihood of highly guilt-prone individuals to reach leadership positions and to be regarded as highly effective leaders (Schaumberg & Flynn, 2012).

Thus, guilt appears to motivate individuals to achieve important goals. The present paper investigates the motivational effect of guilt in competitions. Similarly to behaviors that stem from the experience or anticipation of guilt, competitive goals have a positive effect on motivation and play a role in maintaining and bolstering one's self-image as a competent or accomplished person (Ames, 1981; Reeve, Olson, & Cole, 1985). However, no study to date has investigated the relationship between guilt and motivation in competitive contexts.

Motivation in Competitive Settings

Competition often serves to boost people's motivation. There is ample evidence showing that people strive to outperform others (Festinger, 1954; Taylor & Lobel, 1989; Wills, 1981), and that competition can increase motivation and effort. For example, providing workers with feedback about their performance relative to that of others can lead to larger and longer-lasting increases in productivity than

feedback on individual performance alone (Blanes i Vidal & Nossol, 2011). People tend to set higher targets for themselves in competitive settings than in individual ones (Brown, Cron, & Slocum, 1998). Competitive goals, i.e., goals to outperform others rather than to achieve a certain personal result, are associated with greater engagement, efficacy, and productivity for experimental groups (Mulvey & Ribbens, 1999), executives (Eriksson, 1999), farm workers (Erev, Bornstein, & Galili, 1993), nurses (McKeever, Kinney, Lima, & Newall, 2016), athletes and race car drivers (Becker & Huselid, 1992; Locke, 2007), and even for marine mammals (Shani, Cepicka, & Shashar, 2011).

Increased motivation to achieve competitive goals seems highly justified. First, competition involves the pursuit of scarce resources or outcomes that cannot be enjoyed jointly by the competitors (Deutsch, 1949). Attaining the desired outcome requires overcoming an additional obstacle, in the form of others' efforts to win, which is not inherently present in other situations. But the desire to win goes beyond the motivation to pursue scarce and contested assets (Malhotra, 2010). Competitive goal achievement brings about positive outcomes for individuals, which exceed the objective, material gains for which they compete, and enhance their subjective wellbeing and positive self-image. For example, in response to a win by their favorite sports team, fans report a more positive mood, higher self-esteem, and greater life satisfaction (Hirt, Zillmann, Erickson, & Kennedy, 1992; Schwarz, Strack, Kommer, & Wagner, 1987). Defeating or outperforming others enhances one's global self-evaluation and perception of competence, and leads to higher self-attribution of ability (Ames, 1981; Colpaert, Muller, Fayant, & Butera, 2015; Reeve et al., 1985). In other words, maximizing relative payoffs has a unique benefit for individuals, independent of the absolute payoffs they gain in the process.

Why Guilt and Competitive Goals May Hurt Motivation

Although both guilt and competition play a role in increasing task motivation, they possess some attributes that may make them incompatible with each other. These attributes can reduce, rather than increase task motivation, when people who experience guilt, or who are highly prone to guilt, attempt to achieve a competitive goal. Guilt encourages the pursuit of personal goals, but it is also associated with behaviors that strengthen social relationships and ensure one's continued acceptance by others (Baumeister

et al., 1994; Yang, Yang, & Chiou, 2010). People who feel guilty because of an interpersonal transgression often attempt to directly repair the harm they have caused (Baumeister et al., 1994). They also feel increased concern for others' interests and for how their own behavior influences the wellbeing of other people (de Hooge, Zeelenberg, & Breugelmans, 2007; Hareli & Parkinson, 2008; Leith & Baumeister, 1998). As a result, guilt is associated with volunteering (Quiles & Bybee, 1997; Regan, Williams, & Sparling, 1972), organizational citizenship behavior (Ilies, Peng, Savani, & Dimotakis, 2013), and cooperation in bargaining (de Hooge et al., 2007; Ketelaar & Au, 2003; Nelissen, Dijk, & DeVries, 2007).

Whereas guilt increases the importance of both personal achievement and the maintenance of positive relationships with others, competition seems to promote the former at the expense of the latter (Hyland, 1989). Competition is defined as a situation in which two or more people vie for a mutually exclusive achievement outcome (Johnson & Johnson, 1989). Therefore, a central characteristic of a competitive goal is that it is pursued by multiple individuals or groups, but can only be attained by one. One's success is everyone else's failure. Naturally, this inherent conflict is detrimental to the relationships between competitors (Danziger, Disatnik, & Shani, 2017). For example, in game experiments, players who are assigned a rival report more negative attitudes toward others than do players who do not have a rival, and remember their competitors' faces as more aggressive than those of non-competing players (Balas & Thomas, 2015; Brandts, Riedl, & van Winden, 2009). Competition also directly affects behavior in ways that damage the relationships between counterparts. Competitive incentives reduce the prevalence of cooperation and helping behaviors, both in the lab (Irlenbusch & Ruchala, 2008) and in the workplace (Drago & Garvey, 1998; Drago & Turnbull, 1991). They also increase individuals' propensity to directly inflict harm upon each other, by punishing their competitors and sabotaging their efforts (Carpenter, Matthews, & Schirm, 2010; Goette, Huffman, Meier, & Sutter, 2012; Harbring & Irlenbusch, 2011).

Achieving a competitive goal, in the form of either higher status or better performance relative to others, often comes at the cost of hurting one's social relations (Exline & Lobel, 1999). Individuals who have outperformed others are sensitive to these costs. They express happiness about their achievement, but also signs of ambivalence (Santor & Zuroff, 1998). If outperformers sense or imagine that the counterparts

they defeated are experiencing negative feelings, they may display empathy, sympathetic negative affect, and guilt, as they assume responsibility for causing this unpleasant state (Zell & Exline, 2010). These feelings may reduce the desirability of winning or of the favorable comparison with others, even to the point of motivating outperformers to minimize their advantage. For example, to put lower-status individuals at ease, some higher-status individuals often “play dumb” when interacting with them (Gove, Hughes, & Geerken, 1980). Such intentional underachievement demonstrates the importance of maintaining interpersonal relationships at the expense of establishing one’s superiority, contrary to one’s goal in a competition.

In sum, guilt motivates personal goal achievement as well as prosocial behavior. Competitive settings often increase motivation by combining the personal benefits of individual achievement with scarce resources and status-related rewards. At the same time, they are also characterized by an inherent contradiction between personal and prosocial goals, so that any effort to achieve either of these guilt-affected goals counters the other. Individual competitive success inevitably harms others, preventing one from acting prosocially and maintaining relationships. Therefore, I propose that guilt, either experienced or anticipated, results in lower motivation in competitive than in non-competitive situations. This, in turn, may lead individuals experiencing guilt and those who are prone to such feelings to expend less effort and other resources toward achieving competitive goals.

The present research contributes to the literature in several ways. First, it fills a gap in the literature on motivation. On one hand, competition is said to enhance task motivation. Although some negative effects on competitors’ ultimate outcomes have been documented (e.g., Bazerman & Samuelson, 1983; Harbring & Irlenbusch, 2008), no study to date has identified a condition in which competition directly reduces the desire to succeed. Second, it provides insight into the ways in which guilt affects prosocial and achievement motivations. If guilt motivates personal goals as well as interpersonal ones, what happens when the two goals contradict one another? Answering this question can expand our understanding of the complexity of the behavioral effects of guilt. Finally, rather than focusing on integral effects of guilt, that is, behaviors that directly address the source of the emotion (e.g., the victim of a transgression), the present research examines incidental effects of guilt on behavior, in matters that are

unrelated to the event or individuals who elicited these feelings (de Hooze, 2013; Loewenstein & Lerner, 2003; Västfjäll et al., 2016). Separating the source of guilt from the competitive environment removes possible confounding effects of a desire for direct reciprocity and fairness vis-à-vis the harmed person toward whom one feels guilty. In the experiments reported here, participants cannot make amends or remedy the situation that caused the guilt. Their behavior can only affect counterparts to whom they have no outstanding moral debts. Therefore, any differences in behavior cannot be attributed to a desire to repair a concrete situation or relationship, but only to the effect of guilt on the motivation to achieve personal and prosocial goals.

Hypotheses and Overview of Experiments

The present research hypothesizes that because competition causes a contradiction between personal and prosocial goals, guilt, which promotes both, would be associated with lower motivation on competitive tasks than on individual ones. The experiments are organized as follows. Experiment 1 measured participants' effort on a task, after eliciting an emotion (guilt or neutral) and varying the assigned goal (competitive or individual achievement). Experiment 2 tested the discriminant validity of the effect by manipulating either guilt or shame before administering the task. Similarly to guilt, shame is a self-conscious moral emotion triggered by a personal transgression, but unlike guilt, it does not promote other-oriented concerns. Experiment 3 generalized the associations between guilt, shame, and competitive task effort to trait-level proneness to guilt and shame by measuring individual differences in these personal attributes. Experiments 4 and 5 investigated the motivational underpinnings of the relationship between guilt and competition, specifically, the role of the contradiction between prosocial and personal achievement motives. Experiment 4 distinguished between the goals of defeating others in a competition as opposed to outperforming them without affecting their outcome, so that achieving one's goal does not result in harm to others. Experiment 5 attenuated the conflict between personal and prosocial goals by presenting a competitive goal that also carried a prosocial outcome, and measured the effect of this intervention on guilty competitors' quality of work.

The experiments reported here used a variety of methods to elicit emotion and to measure goal-achievement motivation. Experiments 1, 3, 4, and 5 elicited guilt (and shame) by having participants read scenarios in which they experience these emotions. Experiment 2 used a recall task to elicit participants' memories of feeling guilty or ashamed. The two methods, scenario and recall tasks, are the most commonly used emotion manipulations in experimental research (Fehr, Gelfand, & Nag, 2010). Experiment 3 also measured participants' stable, individual tendencies to anticipate guilt and shame. Motivation was tested in several ways. Experiments 1 and 3 assessed participants' effort by measuring the amount of information they worked to collect before providing their final output. Experiment 2 measured their persistence by the amount of time they spent on the task. Experiment 4 measured participants' willingness to pay to improve their likelihood of success, and Experiment 5 measured their diligence by the level of precision they displayed in their work. The article reports how sample sizes were determined for each experiment, as well as all data exclusions, manipulations, and measures.¹

Experiment 1

Experiment 1 tested the effects of competition and guilt on goal-achievement motivation. Guilt was manipulated by administering a scenario, in which half the participants imagined committing an action that makes them feel guilty. Following the guilt manipulation, all participants completed the same task. Half received an individual achievement goal and the other half competed against each other. Motivation was measured by participants' effort invested in the task. The prediction was that guilt and competition would interact to harm task effort, such that participants who experience guilt would exert less effort on the task in the competitive setting than in the individual one.

Method

Participants and procedure. One hundred forty Amazon.com Mechanical Turk workers residing in the US (56 women, *M*_{age} = 33.0) participated in a “study on memory and perception” for \$0.45 and a chance to win a \$6 bonus. The sample size was based on a prior study that used the experimental task (Haran & Ritov, 2014), which included 35 participants per cell and found an effect size of $d = 0.65$; a

¹ Some measures are reported in the Supplementary Online Material.

power analysis of an effect of this size ($f = 0.325$) with 90% power suggested a sample of 102 participants. Participants were randomly assigned to four groups, in a 2 (emotion: guilt/neutral) \times 2 (goal: competitive/individual) design. The experiment began with a guilt manipulation and then proceeded to an effort-based task, which was used to measure participants' motivation. Some participants received an individual goal for the task and others a competitive goal.

Guilt manipulation. All participants read a scenario, adapted from de Hooge, Nelissen, Breugelmans, and Zeelenberg (2011). One version of the scenario was designed to elicit guilt and the other not. Both versions began as follows:

Imagine you have a special offer coupon that gives you a large discount on a product you have been meaning to buy for a long time. The coupon expires today and you are in a hurry to get to the store. However, your car is at the mechanic's for repair, and you have no means of transportation. You ask your friend, Jim, if you can borrow his car to go to the store, and he agrees. You drive Jim's car to the store and get the product for the discounted price.

Participants in the guilt condition read the following conclusion of the scenario:

When you leave the store you find that the car has been stolen. You realize you forgot to lock the car. You call Jim and inform him about this, which makes Jim very sad.

The scenario in this condition was designed to highlight situational factors related to guilt, namely a behavior by the reader that caused harm to someone else, and an attribution of the harm to the reader's behavior, without focusing on flaws in personal character or qualities. In the neutral condition, the scenario did not include a transgression committed by the reader. It concluded with the following passage:

You drive back from the store and return the car to Jim. The next day Jim lends his car to another friend. The friend forgets to lock the car and it gets stolen, which makes Jim very sad.

After reading the scenario, participants completed a manipulation check, also adapted from de Hooge et al. (2011), which included the following questions on a scale ranging from 1 to 9: "How [affective state] would you feel in this situation?" The affective states were guilty, ashamed, (much) regret,

disappointed, sad, afraid, angry, and dissatisfied. The order of all items was randomized between participants.

Goal manipulation. Following the manipulation check, participants completed an effort-based estimation task (Haran, Ritov, & Mellers, 2013). The task consisted of four rounds. In each round, participants were shown a number of objects of different types scattered randomly on the computer screen for 3 seconds each time. Their job was to estimate the object type that appeared most frequently (and their confidence in their choice), and the total number of objects that appeared on the screen. Although the objects were presented for a very short time, participants could click a button to view the scattered objects as many times as they wanted before providing their estimates.

Half the participants received a competitive goal. Each one was randomly paired with another participant in the experiment. Each correct choice of the most frequent object type earned the participant a point, and in each round the participant whose estimate of the total number of objects was closer to the true answer earned another point. In every pair of competitors, the one who earned the most points entered a lottery for the bonus. The other participants received an individual achievement goal. They also earned a point for each correct choice of the most frequent object type, and another point for every estimate of the total number of objects that was within four units of the true answer. Those who earned five points or more entered the bonus lottery.² During the task, participants were not given feedback about their performance or, in the competitive condition, the performance of their counterparts.

Measures. Motivation was measured by the effort participants exerted on the task. Participants' level of effort was represented by the number of times they clicked on the *View* button to see the objects before making their estimates.

Several secondary measures were also taken. There were two measures of participants' outcomes on the task. One was the average absolute error in their estimates of the total number of objects, the other the total number of points they earned. Previous research has found that competitive motivation does not

² The threshold was determined based on the results of a previous study, which used this experimental task on a sample of 170 participants. Per the scoring rules of the current study, those participants achieved an average of 4.59 points ($SD = 1.74$), with a median score of 4.50 points.

always improve performance in competitions. Whereas approach motives for outperforming the competitor are associated with higher performance, avoidance motives related to preventing a loss may lead to performance reduction (Murayama & Elliot, 2012). Therefore, there were no specific predictions regarding either the relationship between motivation and task outcomes or a direct effect of guilt on performance. Finally, at the end of the experiment, participants completed a short questionnaire. The items in the questionnaire and results of their analyses appear in the Supplementary Online Material.

Results

The following exclusion criteria were used prior to data analysis: a) skipping the guilt manipulation scenario by clicking through it less than 1 second after its presentation; b) suspected cheating on the task by achieving perfect performance and a perfect score with less than one click on the *View* button per round.³ Four participants were excluded for skipping the manipulation scenario and two for suspected cheating, although including them did not affect the results. The data of two participants were not recorded because of a technical problem, and two other participants failed to complete the experiment in the allotted time and were bounced from it. Finally, one outlier, who clicked to view the objects 172 times, was removed. The final sample consisted of 129 participants.

Manipulation check. To distinguish the effect of the manipulation on guilt from other effects, the mean level of all other emotional response items was calculated ($\alpha = .940$). A mixed ANOVA comparing guilt to the mean level of all other emotions found a significant Condition \times Emotion interaction, $F(1, 127) = 52.31, p < .001$, partial $\eta^2 = .29$. Participants in the guilt condition reported higher levels of guilt ($M = 8.05, SD = 2.12$) than did those in the neutral condition ($M = 2.43, SD = 2.05$), $t(127) = 15.31, p < .001, d = 2.70$. The manipulation seems to have also affected other emotional responses, whose average was higher in the guilt condition ($M = 7.76, SD = 1.41$) than in the neutral one ($M = 4.04, SD = 1.87$), $t(127) = 12.77, p < .001, d = 2.27$. Whereas guilt was significantly lower than other emotions in the neutral condition, $t(64) = -9.42, p < .001$, the difference reversed in the guilt condition, where guilt was higher than other emotions, albeit not significantly, $t(63) = 1.43, p = .16$. In summary, the manipulation increased

³ Among the 132 participants not suspected of cheating, only one achieved perfect accuracy. That participant clicked the *View* button 21 times throughout the task. Fifteen other participants clicked the *View* button fewer than one time per round; their estimates had an average error of 16.08 ($SD = 10.29$).

reported levels of guilt, as well as other emotions, while the significant interaction suggests the manipulation affected guilt more strongly than other emotions.

Effects of guilt and goal. Effort was measured by the number of times participants clicked on the *View* button to gather information prior to providing their estimates. On average, participants clicked on the button 20.72 times ($SD = 14.04$). A negative binomial regression with a log link function tested the effects of the manipulations on participants' effort. As predicted, the interaction between guilt and competition had a significant negative effect on the effort participants exerted on the task, $b = -.71, p = .001$. The interaction remained significant when the mean level of all other emotions was included in the model as a covariate, $b = -.72, p = .001$.⁴ As figure 1 demonstrates, guilt was associated with greater task effort in the individual setting, $b = .32, p < .05$, but it was detrimental to effort in the competition, $b = -.40, p = .01$. Similarly, assigning the task a competitive goal led to reduced effort among participants in the guilt condition, $b = .36, p = .03$, whereas in the neutral condition, the opposite trend emerged. Participants who read the neutral scenario exerted significantly greater effort to achieve a competitive goal than did those who attempted to achieve an individual goal, $b = .35, p = .02$.

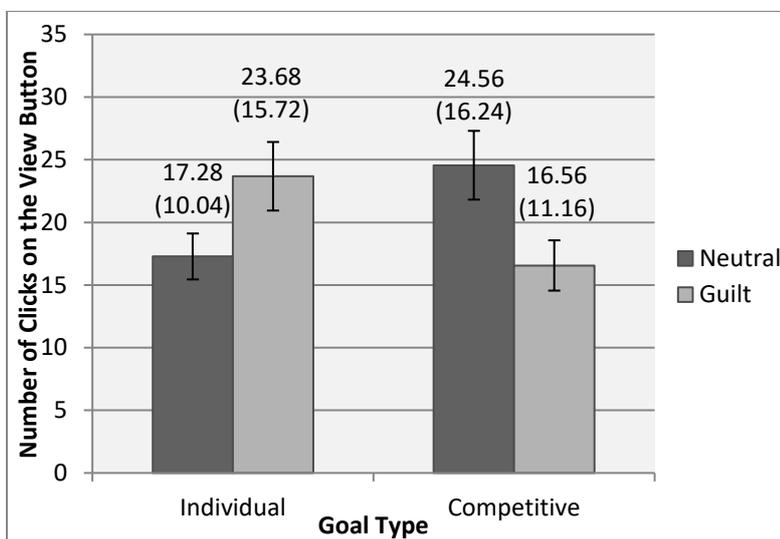


Figure 1. Mean number of clicks on the *View* button by emotion and task goal in Experiment 1. Standard deviations are in parentheses. Error bars represent ± 1 SEM.

⁴ The interaction remained significant when each individual emotion item was included as a covariate, $b \leq -.70, p \leq .002$, and displayed the same robustness in all subsequent experiments as well. Additional analyses tested for possible interactions between each individual emotion item and the goal manipulation, but did not find any significant interactions. Similar analyses were conducted in all subsequent experiments. No interactions between reported emotions and goal were observed, unless specified otherwise. The results of these analyses are reported in the Supplementary Online Material.

As noted earlier, the relationship between competitive motivation and performance is often ambiguous. Nevertheless, in the present experiment, effort correlated significantly with both the accuracy of participants' estimates ($r = -.383, p < .001$ between effort and average error) and the number of points they earned ($r = .391, p < .001$).⁵ On average, participants achieved 4.52 points ($SD = 1.79$) and provided estimates that were off the mark by 10.71 units ($SD = 9.71$). Emotion and goal had a significant interaction effect on average error, $F(1,125) = 4.05, p = .04$, partial $\eta^2 = .03$, with no significant main effects of either competition, $F(1,125) = 1.20, p = .28$, or guilt, $F < 1$. The interaction remained significant when the mean level of all other emotions was included in the model as a covariate, $F(1,124) = 4.02, p < .05$, partial $\eta^2 = .03$. In the guilt condition, competitors had greater average estimate error ($M = 13.17, SD = 11.04$) than those who completed the task individually ($M = 7.89, SD = 6.36$), $t(62) = 2.36, p = .02, d = 0.60$. This difference was not observed in the neutral condition (competitive goal: $M = 9.19, SD = 9.79$; individual goal: $M = 10.74, SD = 10.76$), $t < 1$, and there were no significant differences within each goal type, $t \leq 1.55, p \leq .12, d \leq .39$. A Poisson regression on participants' point totals did not find any significant main effects ($b \leq 0.18, p \geq .12$) or an interaction ($b = -.21, p = .20$).

A test for moderated mediation tested the indirect effect of guilt on average error via effort, moderated by the type of goal, by computing indirect effects for each of 5,000 bootstrapped samples (Hayes, 2013, model 7). The analysis found evidence for moderated mediation, yielding an index of 3.82, 95% CI [1.53, 6.52]. As Figure 2 shows, effort was a significant predictor of average error, $t(126) = 4.64, p < .001, 95\% \text{ CI} [-1.51 -0.61]$, and the indirect effect of guilt on average error, mediated by effort, was significant both in the competition, 95% CI [0.45 4.07], and on the individual task, 95% CI [-3.59 -0.08].

⁵ To make point totals comparable between the competitive and individual conditions, the analysis used the individual condition's estimate accuracy criterion for earning a point for all participants.

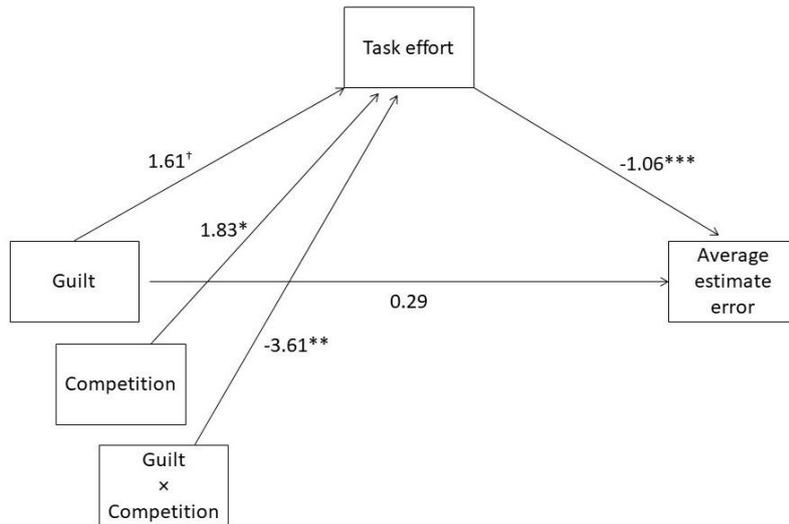


Figure 2. Moderated mediation results of the effect of guilt on average estimate error via task effort, moderated by competition in Experiment 1. Non-standardized coefficients are reported.

Note: † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

Experiment 1 found that guilt is associated with lower effort to achieve a competitive goal than an individual one. Although the task offered guilty participants no opportunity to directly remedy any wrongdoing or make amends to their victims, they nevertheless demonstrated different levels of motivation than participants in the neutral condition. This finding demonstrates the incidental influence guilt can have on behavior, which transcends beyond the context in which the emotion was elicited.

The experiment was not without limitations. Participants who read the guilt-inducing scenario reported significantly higher levels of other negative emotions, in addition to guilt, than those in the neutral condition. Note that the scenario focused participants' attention on guilt-related aspects of the situation, namely a specific behavior and a harm caused to another person. Still, the results of the manipulation check cannot refute the possibility that a different emotional reaction was responsible for the reduction in competitive motivation. Experiment 2 sought to address this limitation by comparing the effects of guilt with those of another emotion. To conduct a conservative test of guilt, its effects were compared to those of its most closely-related emotion, shame.

Experiment 2

Experiment 2 tested whether the reduced motivation of guilty competitors, which was found in Experiment 1, can be associated with any moral emotion or negative affect. In Experiment 1, the guilt manipulation included a description of a scenario, with an emphasis on those attributes of the scenario that elicit guilt. Participants who read this scenario reported higher levels of guilt, but also higher levels of other negative emotions. Verifying that the effects on competitive behavior are attributed to guilt, rather than to negative affect in general, necessitates a test of guilt vs. another negative emotion. Experiment 2 conducted a conservative version of this test by comparing guilt to its most closely-related emotion, shame.

Guilt vs. Shame

Guilt and shame belong to the same category of self-conscious moral emotions (Haidt, 2003). They are also similar in that both are typically evoked by personal transgressions. There are, however, several essential differences between guilt and shame, which may affect the ways in which they influence competitive behavior. One key difference concerns the attributions associated with each. Guilt is characterized by a negative view of one's behavior (i.e., "I did a bad thing") and is associated with attributing the transgression to factors that one can largely control and change in future behavior. Conversely, shame is characterized by a negative view of the global self (i.e., "I am a bad person") and by attributions to more stable factors such as one's character or abilities (Lewis, 1971; Tangney, Stuewig, & Mashek, 2007). Guilt and shame also evoke concerns for different implications of the emotion-inducing event. Guilt highlights the consequences of one's behavior for others, and encourages empathy and perspective taking (Leith & Baumeister, 1998; Tangney, 1991). Shame, by contrast, is linked with a self-focused personal distress, which draws one away from others (Joireman, 2004; Yang et al., 2010). Individuals experiencing shame are concerned primarily with how they are evaluated by others, rather than with other people's feelings (Tangney, 1995). In a social context, guilt motivates attempts to repair and maintain relationships (Leith & Baumeister, 1998), whereas shame promotes egocentrism, self-sufficiency,

and independence from others. For example, when feeling shame, people prefer to complete tasks alone rather than with others, and are less likely to seek help (Chao, Cheng, & Chiou, 2011).

How exactly shame affects competitive motivation is unclear. As noted above, shame increases concern with one's evaluation by others, but also encourages social withdrawal (Joireman, 2004; Tangney, 1995; Yang et al., 2010). Either way, shame does not promote other-oriented motives as does guilt. Therefore, such motives are not expected to affect the motivation of a competitor who feels shame as they would one who feels guilt. Experiment 2 tested this prediction by inducing guilt in some participants and shame in others, and by measuring their motivation in competitive vs. individual tasks. The experiment manipulated guilt and shame by asking participants to recall experiences from their own lives in which they felt guilty or ashamed and then administered the experimental task.

Method

Participants and procedure. Three hundred Amazon.com Mechanical Turk workers residing in the US (177 females, $M_{age} = 36.7$) participated in a “study on memory and perception.” A power analysis of a medium-size effect ($f = 0.25$) with 90% power suggested a sample of 264 participants. Participants were paid \$0.50 and a chance to win a \$6 bonus. Each participant was randomly assigned to one of six groups, in a 3 (emotion: guilt/shame/neutral) \times 2 (goal: competitive/individual) design. The experiment consisted of two parts. The first part included a writing task, designed to elicit guilt, shame, or no particular emotion. The second part included a concentrated attention task, which was used to manipulate the task goal and to measure participants' motivation.

Emotion manipulation. The experiment began with an emotion manipulation (Chao et al., 2011; de Hooge et al., 2007). Participants in the guilt [shame] condition were asked to “write about an event from your past in which you felt guilt [shame]. Please describe the details of the event, and elaborate on your feelings about the event, and in particular about your feelings of guilt [shame].” Participants in the neutral condition were asked to “write about an ordinary day in your life. Please describe the details of your day, including your tasks and interactions.” After writing their passages, participants rated the degree to which they experienced guilt, shame, regret, disappointment, sadness, fear, anger, and dissatisfaction. Ratings

were provided on a scale ranging from 1 (*Not at all*) to 9 (*Very much*). The order of all items was randomized between participants.

Condition assignment based on participants' written descriptions. Prior research suggests that people's intuitive labels for emotions, particularly for guilt and shame, do not always match the way these emotions are defined in the scientific literature (Wicker, Payne, & Morgan, 1983). Therefore, a content analysis of participants' written passages was conducted, in order to assign them to guilt and shame conditions based on the type of emotional experiences their passages highlighted, rather than on the emotion label they were assigned. Three independent judges, blind to the hypotheses of the experiment and to participants' assignment to conditions, and unfamiliar with the theoretical distinction between guilt and shame, analyzed the written passages of participants in the guilt and shame conditions. Two judges read all of the passages, and rated each one on two dimensions, which correspond to the two main distinctions between shame and guilt discussed above. One distinction is the evaluative focus evoked by the emotion (Lewis, 1971; Niedenthal, Tangney, & Gavanski, 1994). Descriptions that included an evaluation of the author's self, character, or qualities were coded as 1; those that evaluated the author's behavior were coded as 2; undetermined cases were coded as 0. The other distinction used to classify the passages as related to shame or guilt was whether the author expressed self-oriented distress or other-oriented concern (Leith & Baumeister, 1998; Tangney, 1995). The judges coded passages that described self-focused emotional experiences as 1, and passages describing other-oriented emotional experiences as 2; undetermined cases were coded as 0. Passages that were rated as undetermined by one judge but as either 1 or 2 by the other judge received the latter, decisive rating. Passages that were rated as 1 by one judge and as 2 by the other, and those that were rated as undetermined by both judges, were read by the third judge, who assigned the final ratings to these passages. The alternative guilt and shame groups were then determined based on these coding schemes.

Goal manipulation. Following the manipulation check, participants completed a task that involved reading six passages. Participants observed each passage and estimated the number of times the letter *a* appeared in it. Each estimate that came within two units of the correct number gained the participant one point. In the individual condition, participants needed to earn 4 points or more to enter the lottery for the

monetary bonus. In the competition condition, participants were divided into pairs; in each pair, the participant who earned more points was declared the winner and entered the prize lottery. Ties were resolved by a random draw. Participants did not receive feedback about their performance or, in the competition condition, about the performance of their counterparts during the task.

Measures. Participants' motivation was represented by their persistence on the task. Persistence was measured by the time participants spent viewing each passage. Similarly to Experiment 1, the task also provided two secondary measures of the average absolute error in participants' estimates and the total number of points they earned in the experiment.

Results

Experiment 2 used two criteria for participant exclusion prior to data analysis. The first criterion was skipping the manipulation by not completing the writing task. No participants were excluded per this criterion. The second criterion involved suspected disengagement from the task. The mean time to complete one estimate was 59.25s ($SD = 20.81$). Individual responses that took more than three minutes were excluded for suspicion that the participant walked away from the computer, and displaying this lag in half the tasks or more led to the exclusion of the participant's entire data. Five participants were removed per this criterion, although including them did not affect the pattern of the results. Finally, there were no outliers on the main dependent variable. The final sample consisted of 295 participants.

The content analysis of participants' descriptions produced somewhat different distinctions between groups than the one based on the emotions they were assigned. The judges exhibited moderate agreement on the classification of the written passages as guilt-related or shame-related (evaluative focus: $\kappa = 0.58, p < .001, 95\% \text{ CI } [0.475, 0.691]$; emotional concern: $\kappa = 0.50, p < .001, 95\% \text{ CI } [0.382, 0.614]$). The consistency between the judges' distinctions and the original condition assignment, however, was low, although still statistically significant (evaluative focus: $\kappa = 0.14, p = .02, 95\% \text{ CI } [0.020, 0.266]$; emotional concern: $\kappa = 0.24, p < .001, 95\% \text{ CI } [0.116, 0.370]$). Some participants in the shame condition wrote passages that focused on their behavior or that described an emotional concern for others, whereas some participants in the guilt condition described experiences that focused on their self or character, or that

elicited a self-directed emotional reaction. Table 1 summarizes the results of content analyses. Note that in the evaluative focus dimension, most stories in both conditions were rated as focused on one's behavior. Many passages whose authors did not elaborate on their emotional experience, other than describing what they did that caused the emotion, were coded as behavior-evaluating. The emotional concern dimension produced fairly even groups of guilt and shame. Because the content coding yielded different distinctions between participants than does the manipulation, the data were analyzed according to each of the three possible condition assignments. Note that descriptions of experiences more closely related to guilt may still primarily elicit shame and vice versa. Therefore, the group assignments based on the written passages were also subject to a manipulation check.

Table 1. *Coding results of participants' passages by dimension and condition assignment in Experiment 2.*

Evaluative focus	One's character	One's behavior	Undetermined
Shame	39	56	3
Guilt	24	71	5
Emotional concern	Self	Other	Undetermined
Shame	62	34	2
Guilt	36	58	6

Note: Numbers include participants who were removed from subsequent analyses per the experiment's original exclusion criteria.

Manipulation check. The two items of interest in the emotion questionnaire were guilt and shame. To distinguish group differences in guilt and shame from other emotions, the mean level of all other emotional response items was calculated ($\alpha = .910$).

Condition assignment based on assigned emotion. A mixed ANOVA on reported guilt, shame and all other emotions, with emotion condition as a between-subjects factor, yielded a significant interaction, $F(4, 584) = 46.25, p < .001$, partial $\eta^2 = .24$. The guilt group reported significantly higher guilt ($M = 8.08, SD = 1.46$) than both shame ($M = 7.07, SD = 2.24$) and other emotions ($M = 5.89, SD = 1.83$), $t(97) \geq 5.94, p < .001$. Similarly, the shame group reported significantly higher shame ($M = 8.35, SD = 1.54$) than both

guilt ($M = 7.52, SD = 2.32$) and other emotions ($M = 6.43, SD = 1.55$), $t(95) \geq 3.87, p < .001$. In the neutral condition, guilt ($M = 1.81, SD = 1.51$) and shame ($M = 1.84, SD = 1.66$) did not differ, $t < 1$, and both were significantly lower than other emotions ($M = 2.09, SD = 1.40$), $t(100) \geq 2.46, p \leq .02$. There were significant between-groups differences in every emotional response, $F(2, 292) \geq 216.07, p < .001$. Planned contrasts show that participants who were asked to write about an experience of guilt reported higher guilt, $t(292) = 2.17, p = .03, d = 0.25$ and lower shame, $t(292) = 4.86, p < .001, d = 0.57$, than those asked to write about an experience of shame.

Condition assignment based on evaluative focus. The content analyses of both dimensions appear to have successfully distinguished between guilt and shame. A mixed ANOVA on reported guilt, shame and all other emotions, with evaluative focus as a between-subjects factor, yielded a significant interaction, $F(4, 568) = 37.10, p < .001$, partial $\eta^2 = .21$. Participants who focused on their behavior reported significantly higher guilt ($M = 8.19, SD = 1.25$) than both shame ($M = 7.66, SD = 1.95$) and other emotions ($M = 6.17, SD = 1.60$), $t(123) \geq 3.78, p < .001$. Similarly, participants who focused on their self or character reported significantly higher shame ($M = 8.19, SD = 1.65$) than both guilt ($M = 7.31, SD = 2.44$) and other emotions ($M = 6.47, SD = 1.62$), $t(61) \geq 2.54, p \leq .01$. There were significant between-groups differences in every emotional response, $F(2, 286) \geq 244.04, p < .001$. Planned contrasts show that a focus on one's behavior was associated with higher guilt than a focus on one's character, $t(284) = 3.44, p < .001, d = 0.41$, and with lower shame, a marginally-significant difference, $t(284) = 1.92, p = .06, d = 0.23$.

Condition assignment based on emotional concern. A mixed ANOVA on guilt, shame and all other emotions, with emotional concern as a between-subjects factor, yielded a significant interaction, $F(4, 568) = 33.13, p < .001$, partial $\eta^2 = .19$. Participants who expressed other-oriented concern reported higher guilt ($M = 8.23, SD = 1.27$) than both shame ($M = 7.71, SD = 1.91$) and other emotions ($M = 6.14, SD = 1.74$), $t(89) \geq 3.08, p < .001$. Participants whose emotional concern was directed at themselves reported significantly higher shame ($M = 7.97, SD = 1.74$) than other emotions ($M = 6.30, SD = 1.49$), $t(95) = 8.96, p < .001$, and higher shame than guilt ($M = 7.59, SD = 2.09$), although the difference did not reach significance, $t(95) = 1.49, p = .14$. There were significant between-groups differences in every emotional response, $F(2, 286) \geq 234.81, p < .001$. Planned contrasts found that emotional concern for others was

associated with higher guilt than inward-directed concern, $t(284) = 2.62$, $p = .009$, $d = 0.31$, and that shame displayed the opposite difference, but it did not reach significance, $t(284) = 1.00$, $p = .32$, $d = 0.12$.

Effects of emotion and goal. Persistence was measured by the time participants spent on each task. On average, participants spent 59.25 seconds ($SD = 20.81$) per task before proceeding to the estimate. The distribution of this measure was highly skewed ($Skewness = 1.11$, $SE = 0.14$), therefore it was subjected to a $\log(10)$ transformation. Table 2 shows the means of the non-transformed values for each group, according to the different condition assignments.

Table 2. Mean time, in seconds, spent on a task by emotion and task goal in Experiment 2. The table includes the three different emotion condition assignments. Standard deviations are in parentheses.

Emotion condition assignment	Goal condition	Guilt-related	Shame-related	Neutral
Writing instruction: shame or guilt	Individual	63.39 (20.24)	59.73 (20.29)	61.39 (20.24)
	Competitive	53.61 (22.28)	58.56 (18.37)	58.96 (22.26)
Evaluative focus: the self or one's behavior	Individual	62.95 (17.61)	60.43 (25.01)	
	Competitive	52.10 (18.98)	64.78 (23.00)	
Emotional concern: self-directed or other-oriented	Individual	64.65 (20.25)	59.13 (20.86)	
	Competitive	52.25 (20.11)	58.79 (21.30)	

Original condition assignment. A 3×2 univariate ANOVA on the effects of emotion and goal type on task persistence found a main effect of goal, $F(1,289) = 5.50$, $p = .02$, partial $\eta^2 = .02$ and a marginally-significant Emotion \times Goal interaction, $F(2,289) = 2.53$, $p = .08$, partial $\eta^2 = .02$. Both effects remained virtually the same when the mean level of all non-manipulated emotions was included as a covariate (goal: $F(1,289) = 5.13$, $p = .02$, partial $\eta^2 = .02$; interaction: $F(2,289) = 2.51$, $p = .08$, partial $\eta^2 = .02$). There was no main effect of emotion, $F < 1$. As Table 2 shows, participants who were instructed to write about guilt were less persistent in pursuing a competitive goal than an individual one, $t(96) = 2.60$, $p = .01$, $d = 0.53$, whereas in the neutral condition, the goal did not affect persistence, $t < 1$. As predicted, participants who were instructed to describe a shame experience did not exhibit lower task persistence in

the competition than in the individual setting, $t < 1$. Within each goal condition, one-way ANOVAs with two planned contrasts tested for differences in persistence between guilty participants and other participants, and among those other participants, whether there were differences between the shame and neutral conditions. While the overall group difference was not significant, $F \leq 2.22$, $p \geq .11$, partial $\eta^2 \leq .03$, guilt did significantly reduce persistence in the competition, $t(146) = 2.10$, $p = .04$, $d = 0.35$, whereas no difference was observed between the shame and neutral groups, $t < 1$. The individual task did not produce any significant differences, $F < 1$.

Persistence correlated significantly with both the accuracy of participants' estimates ($r = -.340$, $p < .001$ with their average error) and with the number of points they earned ($r = .199$, $p = .001$). Participants had an average estimate error of 2.93 units ($SD = 2.18$) and earned, on average, 3.22 points ($SD = 2.08$) throughout the experiment. There was a marginally-significant Emotion \times Goal interaction on average error, $F(2,289) = 2.38$, $p = .09$, partial $\eta^2 = .02$, with no main effect of either factor, $F < 1$. Including reported levels of non-manipulated emotions as a covariate yielded the same F value and effect size for the interaction. In the guilt condition, participants performed more poorly on the competitive task ($M_{\text{error}} = 3.49$, $SD = 2.70$) than on the individual one, a marginally-significant difference ($M = 2.58$, $SD = 1.84$), $t(96) = 1.95$, $p = .05$, $d = 0.40$. No effect of goal was observed in either the shame condition (competitive: $M = 2.69$, $SD = 2.07$; individual: $M = 2.97$, $SD = 2.33$) or the neutral condition (competitive: $M = 2.78$, $SD = 1.72$; individual: $M = 3.02$, $SD = 2.28$), $t < 1$. There were no effects of emotion within either goal condition, $F \leq 1.99$, $p \geq .14$, partial $\eta^2 = .03$, although a planned comparison reveals that guilt was associated with significantly higher error on the competitive task, $t(146) = 1.98$, $p < .05$, $d = 0.33$. There were no differences in accuracy between the shame and neutral groups on either type of task, $t < 1$. A test for moderated mediation checked the indirect effect of guilt (by the original condition assignment) on average error via persistence, moderated by the type of goal, by computing indirect effects for each of 5,000 bootstrapped samples (Hayes, 2013, model 7). The analysis found evidence for moderated mediation, yielding an index of 0.40, 95% CI [0.02, 0.97]. This result suggests that the indirect effects of guilt, mediated by persistence, were significantly different from each other, depending on the goal associated with the task. Persistence was a significant predictor of average error, $t(292) = 6.15$, $p < .001$,

95% CI [-6.10 -3.14]. The indirect effect of guilt on average error, mediated by persistence, was significant in the competition, 95% CI [0.003 0.79], though not on the individual task, 95% CI [-0.34 0.10]. A Poisson regression on total points earned found no significant effects, $b \leq 0.09$, $p \geq .43$.

Emotional concern-based condition assignment. Group assignment based on the type of emotional concern described in the passages yielded similar patterns of persistence as those observed in the original condition assignment. There was a significant Emotional Concern \times Goal interaction, $F(2,281) = 3.67$, $p = .03$, partial $\eta^2 = .03$, as well as a significant main effect of goal, $F(1,281) = 6.92$, $p = .009$, partial $\eta^2 = .02$. Both effects remained the same when the analysis included the mean level of the non-manipulated emotions as a covariate (interaction: $F(2,280) = 3.64$, $p = .03$, partial $\eta^2 = .03$; goal: $F(1,280) = 6.53$, $p = .01$, partial $\eta^2 = .02$). The main effect of emotional concern was non-significant, $F < 1$. Simple effects tests reveal that participants who had expressed other-oriented emotional concern were less persistent in pursuing a competitive goal than an individual goal, $t(88) = 2.99$, $p = .004$, $d = 0.64$, whereas the self-oriented group did not display such effect, $t < 1$. There were no overall significant group differences within goal conditions, $F \leq 1.19$, $p \geq .31$, partial $\eta^2 \leq .02$, but a planned contrast found that competitors who expressed other-oriented concern were significantly less persistent than other competitors, $t(140) = 2.28$, $p = .02$, $d = 0.39$, whereas competitors who expressed self-oriented concern did not differ from those in the neutral condition, $t < 1$. There were no significant differences in the individual task $t \leq 1.42$, $p \geq .16$, $d \leq 0.24$, and no effects on average error, $F < 1$, or total points earned, $b \leq 0.05$, $p \geq .65$.⁶

Evaluative focus-based condition assignment. Evaluative focus interacted significantly with goal type to affect persistence, $F(2,281) = 3.84$, $p = .02$, partial $\eta^2 = .03$, while both main effects were non-significant, $F \leq 2.65$, $p \geq .10$, partial $\eta^2 = .01$. The interaction remained significant when controlling for other emotion items, $F(2,280) = 3.67$, $p = .03$, partial $\eta^2 = .03$. Simple effects tests find that participants who had evaluated their behavior spent less time on the task to achieve a competitive goal than they did to

⁶ Additional analyses tested for possible interactions between each individual emotion item and the goal manipulation, controlling for participants' emotion condition assignments. Controlling for evaluative focus, significant interactions were observed for the competitive goal manipulation with guilt ($b = .54$, $p = .02$), regret ($b = .42$, $p < .05$), sadness ($b = .41$, $p = .04$), anger ($b = .24$, $p < .05$) and dissatisfaction ($b = .34$, $p = .04$). Similar analyses controlling for emotional concern found significant interactions for the competitive goal with guilt ($b = .52$, $p = .03$) and dissatisfaction ($b = .36$, $p = .03$). The full results are reported in the Supplementary Online Material.

achieve an individual one, $t(122) = 3.28$, $p = .001$, $d = 0.59$, but this effect was not observed in the self-evaluating group, $t < 1$. Within the competitive goal condition, a one-way ANOVA found a significant emotion effect on persistence, $F(2,140) = 3.64$, $p = .03$, partial $\eta^2 = .05$. Planned contrasts reveal that competitors in the behavior-evaluation condition were significantly less persistent than other competitors, $t(140) = 2.67$, $p = .008$, $d = 0.45$, whereas making self-directed evaluations did not significantly affect persistence in the competition, $t(76) = 1.02$, $p = .31$. There were no significant group effects, $F < 1$ or significant contrasts, $t < 1$, in the individual goal condition, and no significant direct effects of this condition assignment on average error, $F < 1$ or total points earned, $b \leq 0.10$, $p \geq .46$.

Discussion

Whereas guilt increases concern for others' welfare in addition to achieving personal goals, competitive incentives pit one's own interests against those of others; in Experiments 1 and 2, this conflict resulted in reduced competitive motivation. Unlike guilt, shame does not increase concern for others, therefore it was not expected to have a different effect on motivation in individual settings vs. competitive ones. Consistent with this prediction, guilty participants were less persistent on the competitive task than on the individual one, but this difference was not observed for participants in the shame condition. These results suggest that the detrimental effect of guilt and competition on motivation stems from a specific attribute of guilt, which is not common to every negative, moral, or self-conscious emotion.

An auxiliary, though important, finding of this experiment concerns the partial inconsistency between participants' intuitive definitions of guilt and shame and the definitions used in research. Content analyses of participants' descriptions found that some participants who were instructed to write about a guilt experience described an event that was more likely associated with shame and vice versa. Therefore, the results of the experiment were analyzed both according to the emotion participants were instructed to describe and according to the evaluative and emotional attributes highlighted in their written passages. Assigning participants to groups based on these attributes yielded an even larger effect of guilt on competitive motivation. Unlike the emotion recall task, the scenario manipulation used in Experiment 1 focused participants' imagination on situational aspects that elicit guilt, as defined in the scientific

literature. Therefore, the following experiments used similar manipulations, which preserve random condition assignment but do not depend on participants' own ideas about guilt and shame experiences.

Experiment 3

Experiment 3 tested whether the effects found in Experiments 1 and 2 can be generalized to a stable individual tendency to feel guilt and shame. Whereas the first two experiments manipulated feelings of guilt or shame, Experiment 3 measured participants' trait-level proneness to these emotions, and tested its relationship with the motivation to achieve a competitive vs. an individual goal.

Guilt proneness is a personality trait indicative of a predisposition to experience negative feelings about personal wrongdoing. It does not refer to the likelihood of feeling guilty at any particular moment, or to the intensity of the affective state, but rather to the anticipation of a bad feeling as a result of committing a transgression (Cohen, Panter, & Turan, 2012). Studies of proneness to guilt and shame have found differences between the two attributes that mirror the different effects of the experienced emotions. For example, whereas guilt proneness is positively related to constructive response intentions, perspective-taking, and empathic concern, shame proneness is associated with impaired capacity for other-oriented empathy and a propensity for problematic, self-oriented behaviors (Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996; Wolf, Cohen, Panter, & Insko, 2010). Based on these findings, Experiment 3 tested the prediction that, similarly to experienced guilt and shame, guilt proneness is associated with lower motivation on competitive tasks than on individual ones, whereas shame proneness is not.

The experiment was conducted longitudinally, and consisted of two phases. Phase 1 included manipulations of state emotion and goal, and an effort-based task, as did the previous two experiments. Phase 2 measured guilt proneness and shame proneness, as well as other constructs related to empathy and prosocial tendencies. To measure their proneness to guilt and shame, participants completed the Guilt and Shame Proneness (GASP) scale (Cohen, Wolf, Panter, & Insko, 2011). They also completed exploratory measures of empathy and social value orientation (SVO). Research on guilt has found correlations with feelings of empathy (Hoffman, 1982; Zahn-Waxler, Cole, & Barrett, 1991). Therefore, individual inclinations toward empathic feelings may mediate the negative relationship between guilt proneness and

competitive motivation. SVO refers to the set of motivations that underlie individuals' preferences regarding their outcomes relative to those of others (De Dreu & Boles, 1998; van Lange, Bekkers, Schuyt, & van Vugt, 2007). It is measured by people's preferences between different resource allocations, which help identify them as belonging to one of four basic categories (Messick & McClintock, 1968; Murphy, Ackermann, & Handgraaf, 2011): altruists prefer maximizing gain for others even at the expense of their own outcomes; prosocial individuals prefer to maximize the sum of the outcomes for both self and others; individualists seek to maximize resources for themselves and are indifferent to how much others receive; and competitive persons maximize their relative gain, or the difference between their own outcome and that of others. Although there was no a priori prediction regarding the relationship between SVO and competitive behavior, earlier research on SVO found that cooperators perceive competition (vs. cooperation) as a morally-relevant construct, whereas non-cooperators place greater emphasis on power, associating competitive behavior with strength and cooperation with weakness (Liebrand, Jansen, Rijken, & Suhre, 1986). Therefore, the experiment investigated whether people of different categories respond differently to the manipulations of guilt in competitive and non-competitive settings. The design and hypotheses of the experiment were preregistered online: <http://aspredicted.org/blind.php?x=7e6ss7>.

Method

Participants and procedure. Five hundred individuals ($M_{age} = 34.48$; 279 females, 219 males, two did not declare) were initially recruited through Prolific.ac. A final sample size of 420 was determined by a power analysis, conducted a priori, for a test of a $3 \times 2 \times 2$ experimental design, a medium-size effect ($f = 0.25$), and 90% power. The experiment consisted of two phases, conducted separately. Data for Phase 1 were collected over four days. Data collection for Phase 2 began five days after the completion of the previous phase and ended two weeks later. The initial sample size sought to account for participant exclusions based on predetermined criteria and for expected attrition between the first and second phases of the study.

Both phases of the experiment were conducted online. Phase 1, titled "A Perception Game," included an emotion manipulation and an effort-based task. For their time, participants received £0.80 and

a chance to win a bonus of £5. Phase 2, titled “A Survey about Self and Others,” included measures of guilt proneness, shame proneness, SVO, and empathy. Participants received £1 and a chance to win a bonus of up to £10 for their participation in this phase. In order to ensure that the emotion manipulations do not influence participants’ responses to the guilt and shame proneness questionnaire and vice versa, the two phases were administered at least five days apart.

Emotion manipulation. As in Experiment 1, the study began with a scenario-based emotion manipulation. Participants in the guilt and neutral conditions read the same scenarios described in Experiment 1. A third group received a shame-inducing scenario:

Imagine you have a special offer coupon that gives you a large discount on a product you have been meaning to buy for a long time. The coupon expires today and you are in a hurry to get to the store. You drive to the store, buy the product at a discount, go back to the car park and put the product in the trunk. When you leave, you notice that the trunk is still open. You get out to close it, but forget to shift the gear to Park. Still on Drive, the car starts going forward, and falls right into a ditch. Your car is a total loss. A large crowd of people has witnessed your accident. You feel like a terrible driver.

After reading the scenario, participants completed a manipulation check, which included the eight items used in Experiments 1 and 2, as well as six new items. Four items pertained to theoretical distinctions between guilt and shame, and were presented only to the guilt and shame groups. The items were “To what extent would you want to make amends for the mess you caused?” “To what extent would the mess you caused make you care more about your friendships with others?” “To what extent would you want to spend some time alone after what happened?” and “Would you feel more like a stupid person or like a good person who has done something stupid?” The scales for the first three items ranged from “Not at all” to “Very much,” and for the latter item, from “Stupid person” to “Good person.” Two additional items measured positive emotions, namely pride and relief, and were administered to all participants. The order of all items was randomized between participants.

Goal manipulation. After the manipulation check, participants completed the same effort task as in Experiment 1, with one additional round. In each of the five rounds, objects appeared on the screen for 3 seconds, and participants guessed the type of object that appeared most frequently and the total number of objects presented. Although the objects appeared for a very brief time, participants could click a button to view the objects as many times as they wanted before providing their estimates.

In the competition condition, each participant was assigned a counterpart. Their goal was to defeat their counterparts by earning more points than them. Participants earned a point in each round for correctly guessing the most frequent object type and another point if their estimate of the total number of objects was more accurate than the counterpart's estimate. In the individual goal condition, the goal was to earn five points or more. One point was awarded for each correct choice of the most frequent object type, and another point for an estimate of the total number of objects that was within four units of the correct answer. In both conditions, goal achievement was rewarded by entry to a lottery for the monetary bonus. During the task, participants did not receive feedback about their own performance, and in the competitive condition, about the performance of their counterparts.

Measures. Phase 1 of the experiment measured participants' task motivation. Individual level measures were administered in Phase 2.

Motivation. Task effort, represented by the number of times participants clicked on the *View* button to see the objects before making their estimates, served as a measure of motivation. The experiment also provided secondary measures of participants' average absolute estimate error and number of points they earned, although there were no predictions about an effect of either independent variable on them.

Guilt and shame proneness. The GASP scale (Cohen et al., 2011) measured participants' individual level of proneness to guilt and shame. Items of the scale present respondents with scenarios in which they have committed various transgressions, and typical reactions to them. Participants imagine themselves in each situation and indicate the likelihood that they would react in the way described. Responses are recorded on a 7-point scale ranging from 1 (*Very unlikely*) to 7 (*Very likely*). The GASP scale comprises four subscales: negative behavior evaluations (NBE) associated with guilt; guilt-related

repair intentions (guilt-repair); negative self-evaluations (NSE) associated with shame; and shame-related withdrawal intentions (shame-withdrawal). Prior research has found that the evaluative subscales are more predictive of subsequent behaviors and outcomes than the intended action subscales (Cohen et al., 2016).

Social value orientation. Participants completed the SVO measure (Murphy et al., 2011), which consists of six rounds of resource allocation choices. In each round, participants viewed nine alternative allocations of points between them and another participant, and chose their preferred allocation. Some items had a zero-sum design, where more points for the participant meant fewer points for the partner and *vice versa*, whereas other items did not (e.g., all alternatives awarded the participant the same number of points, but varied in the allocation to the partner, and therefore in the difference in points between the participant and the partner). The task was incentive compatible. At the end of the experiment, a random draw selected two participants, one for the role of decision maker and one for the role of recipient. One round of the task was selected at random, and both the decision maker and the recipient received a bonus of £0.10 for each point awarded to them per the decision maker's preferred allocation.

Empathy. Participants completed the Toronto Empathy Questionnaire (TEQ; Spreng, McKinnon, Mar, & Levine, 2009). The TEQ consists of 16 self-report items that measure affective empathy. Participants rate the frequency with which they experience a number of affective situations (e.g., "I enjoy making other people feel better") on a 5-point scale ranging from 0 (*Never*) to 4 (*Always*).

At the end of the survey, participants answered two items that checked whether they paid attention to the questions. The items were presented in the same format as the empathy questionnaire items, but asked the participants to mark specific points on the response scale.⁷

Results

The experiment used the following preregistered exclusion criteria for Phase 1: (a) skipping the guilt manipulation scenario by clicking through it less than one second after its presentation; and (b)

⁷ The attention check was added to the experimental design of Phase 2 after the preregistration of the experiment, due to concerns about a recent rise in the use of bots in online experiments. The results reported here exclude participants who failed to correctly answer both attention check items. The exclusion did not affect any of the results.

suspected cheating on the task by achieving perfect performance and a perfect score with less than one click on the *View* button per round. Ten participants skipped the scenario, and one suspected cheater was identified. Four participants were excluded ad hoc: one reported that he “screenshot the game to count more slowly,” and three others reported colorblindness issues, which made them unable to distinguish between objects of different colors. Finally, two outliers clicked on the *View* button more than 100 times. In total, seventeen participants were removed before the analysis of the data and were not invited to participate in the next phase of the experiment. Their exclusion did not affect the results. The final sample for Phase 1 included 483 participants.

All participants in the final sample of Phase 1 were invited to participate in Phase 2. Four hundred thirty seven of them responded to the invitation. Fifteen participants were removed from the analyses for failing to correctly complete the attention check items, and one outlier was removed, per the preregistered criteria. The sample for Phase 2 included 421 participants.

Manipulation check. To measure the effect of the manipulation on guilt and shame, the mean level of all other negative emotional response items was calculated ($\alpha = .868$). A mixed ANOVA on reported guilt, shame and all other emotions, with emotion condition as a between-subjects factor, yielded a significant interaction, $F(4, 960) = 91.89, p < .001$, partial $\eta^2 = .28$. Participants in the guilt condition reported significantly higher levels of guilt ($M = 8.41, SD = 1.17$) than both shame ($M = 7.95, SD = 1.70$) and other emotions ($M = 7.72, SD = 0.97$), $t(158) \geq 3.79, p < .001$. Similarly, the levels of shame reported by participants in the shame condition ($M = 7.72, SD = 1.50$) were significantly higher than guilt ($M = 7.39, SD = 1.92$), $t(159) = 2.06, p = .04$ and marginally significantly higher than all other emotions ($M = 7.55, SD = 1.02$), $t(159) = 1.75, p = .08$. In the neutral condition, guilt ($M = 2.41, SD = 2.14$) and shame ($M = 2.37, SD = 2.14$) did not differ, $t < 1$, and both were reported at significantly lower levels than other emotions ($M = 4.61, SD = 1.75$), $t(163) \geq 14.92, p < .001$.

There were significant between-groups differences in every emotional response, $F(2, 480) \geq 296.14, p < .001$. Planned contrasts show that participants who read the guilt scenario reported higher levels of guilt than those who read the shame scenario, $t(480) = 5.05, p < .001, d = 0.46$, but they also

reported very high levels of shame that were not lower than the mean reported shame in the shame group, $t(480) = 1.14, p = .25, d = 0.10$. However, the four new items that measured the specific features of guilt and shame suggest the manipulation was able to distinguish between the two emotions. Participants in the guilt condition reported greater willingness to make amends than did the shame group (guilt: $M = 8.45, SD = 0.98$; shame: $M = 6.88, SD = 2.08$), and greater care for their friendships with others (guilt: $M = 6.87, SD = 1.84$; shame: $M = 4.15, SD = 2.25$), $t(317) \geq 8.58, p < .001, d \geq 0.96$. Similarly, participants in the shame condition reported a stronger desire to be alone ($M = 7.25, SD = 2.12$) than did the guilt group ($M = 6.72, SD = 2.17$), $t(317) = 2.22, p = .03, d = 0.25$, and their judgments focused more on their character (“a stupid person”) and less on their actions (“a good person who has done something stupid”), than those of the guilt group (shame: $M = 3.70, SD = 2.81$; guilt: $M = 4.33, SD = 3.00$), a marginally-significant difference, $t(317) = 1.93, p = .05, d = 0.22$.

Finally, one-way ANOVAs with two planned contrasts tested the manipulation’s effect on reports of positive emotions. The analyses found significant between-groups differences in both measures, $F(2, 480) \geq 56.54, p < .001$. The guilt group reported similarly low levels of both pride ($M = 1.48, SD = 1.16$) and relief ($M = 1.62, SD = 1.43$) to participants in the shame condition (pride: $M = 1.53, SD = 1.47$; relief: $M = 1.68, SD = 1.51$), $t < 1$, and the means of both these groups were significantly lower than in the neutral condition (pride: $M = 3.27, SD = 2.32$; relief: $M = 3.68, SD = 2.71$), $t(480) \geq 10.63, p < .001, d \geq 0.97$. Note that the positive emotion ratings in the neutral condition were lower than the mean level of other, negative emotions ratings in the manipulation check, $t(163) \geq 3.86, p < .001$, which suggests that subsequent effects on behavior were not due to positive affect.

Effects of emotion and goal. Participants’ effort was measured by the number of times they clicked the *View* button to observe the stimuli before submitting their estimates. On average, participants clicked the button 22.50 times ($SD = 15.96$). Figure 3 presents the mean levels of effort recorded by the different groups. A negative binomial regression with a log link function tested the effects of the emotion (with dummy variables coded for the guilt and shame conditions) and goal manipulations on participants’ effort. As predicted, there was a significant negative effect for the interaction between guilt and competition, $b = -.37, p = .009$. The effect remained significant when the mean level of all non-

manipulated emotions was included in the model as a covariate, $b = -.38, p = .008$. The interaction between shame and competition was non-significant, $b = -.12, p = .39$.

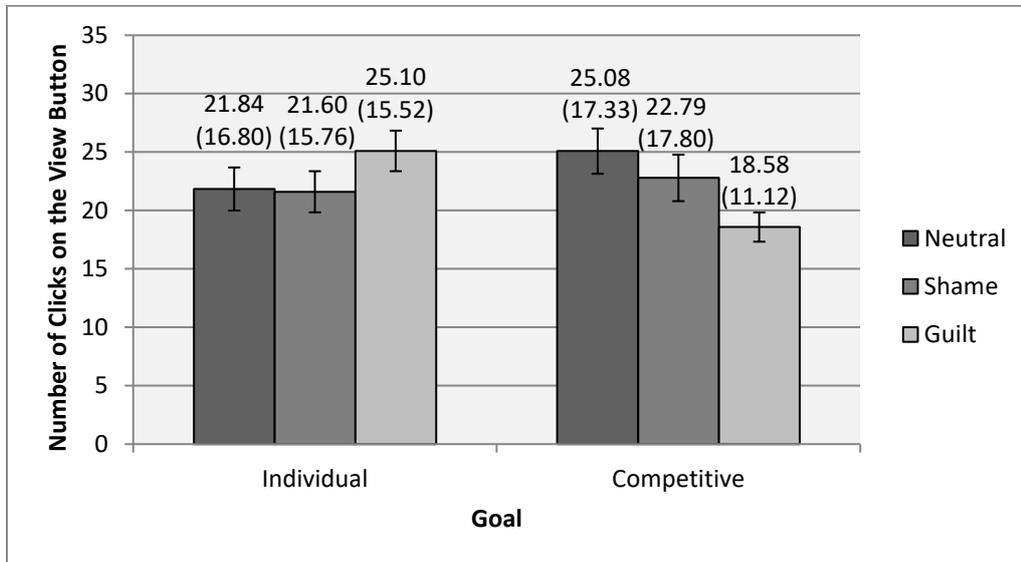


Figure 3. Mean number of clicks on the *View* button by emotion and task goal in Experiment 3. Standard deviations are in parentheses. Error bars represent ± 1 SEM.

Guilt was detrimental to effort in the competition, $b = -.26, p = .01$, but shame was not, $b = -.10, p = .35$, and neither emotion significantly affected effort in the individual setting (guilt: $b = .12, p = .23$; shame: $b = .02, p = .80$). Similarly, assigning the task a competitive goal led to reduced effort of participants in the guilt condition, $b = -.23, p = .01$, whereas in the shame and neutral conditions, the effects of competition on effort were positive and non-significant, $b \leq .14, p \geq .16$.

Participants' estimates missed the mark by an average of 9.28 units ($SD = 8.20$), and they earned, on average, 4.57 points ($SD = 1.76$). Although these measures correlated significantly with participants' effort on the task (average error: $r = -.218, p < .001$; total points: $r = .410, p < .001$), the experimental manipulations had no significant direct effect on either measure (average error: $F < 1.02, p > .36$; total points: $|b| \leq .21, p \geq .35$).

Guilt proneness, shame proneness, and empathy. The GASP scale comprises four subscales, representing moral evaluations and intent to take actions that are related to either guilt or shame. Three of the subscales, namely negative behavior evaluations (NBE), negative self-evaluations (NSE), and shame-withdrawal intentions (SW) displayed moderate internal consistency ($.517 \leq \alpha \leq .652$). The guilt-repair

intentions subscale, however, showed very low internal consistency, ($\alpha = .157$), making its analysis as a unitary construct meaningless.

A series of hierarchical negative binomial regression models tested the effects of competition and of the various GASP components on participants' effort.⁸ The analyses found that the interaction between guilt proneness (NBE) and competition had a negative effect on effort, $b = -.15$, $p = .003$. As Figure 4 shows, high guilt proneness (NBE) was associated with greater effort to achieve an individual goal, $b = 0.10$, $p = .006$, but the effect reversed in the competitive setting, although it did not reach significance, $b = -0.05$, $p = .15$. In contrast to guilt proneness, the subscales related to shame proneness did not display significant effects, $|b| \leq 0.05$, $p \geq .20$. The full analyses, including the guilt-repair items, are reported in the Supplementary Online Material.

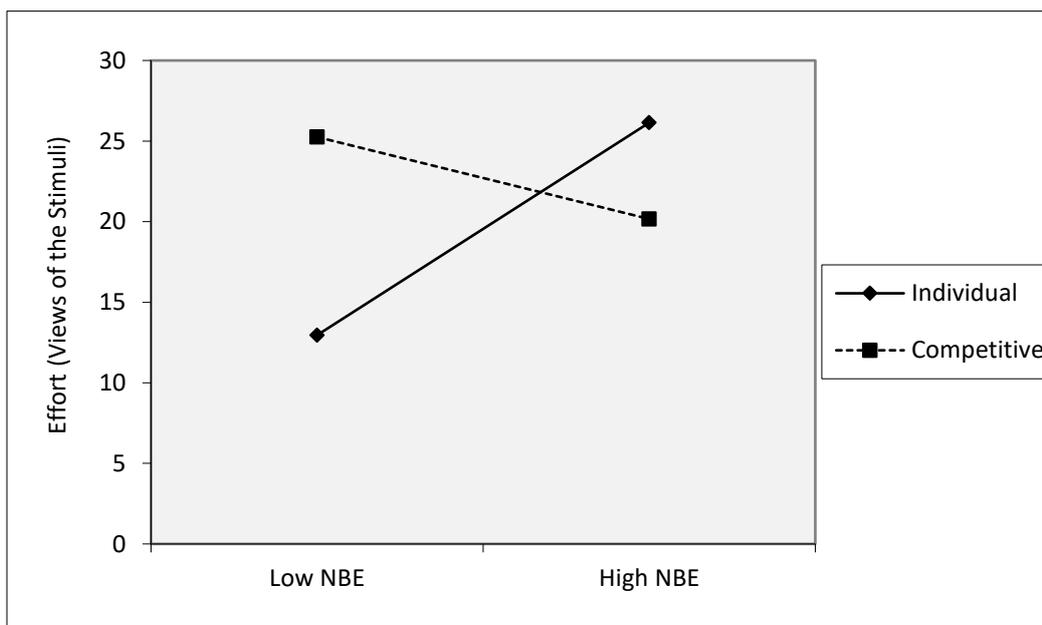


Figure 4. Relationships between negative behavior evaluations (NBE) and effort by goal type in Experiment 3.

Does guilt proneness moderate the effect of state guilt and competition on effort? A hierarchical negative binomial regression tested the effects of the goal and guilt manipulations, participants' NBE scores and all interactions between these variables on task effort. The results are summarized in Table 3. There was no significant interaction of guilt proneness with the guilt manipulation, and no three-way

⁸ Cohen et al. (2011) recommended retaining and analyzing the subscales separately rather than combining them, to avoid problems of multicollinearity.

interaction. Empathy also had no effects, either as a moderator of the effects of the manipulations or as a mediator of the effect of guilt proneness on individual and competitive effort. The analyses of this measure are reported in the Supplementary Online Material.

Table 3. Summary of hierarchical regression analysis for variables predicting task effort in Experiment 3

Variable	Model 1		Model 2		Model 3	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
NBE	.01	.02	.12**	.04	.12**	.05
Competition	-.01	.06	.85**	.27	.93**	.32
Guilt	-.05	.06	.31	.29	.46	.45
NBE × Competition			-.14**	.05	-.16**	.06
NBE × Guilt			-.04	.05	-.07	.08
Competition × Guilt			-.31*	.12	-.58	.58
NBE × Competition × Guilt					.05	.11
χ^2	$\chi^2(3) = 0.84$		$\chi^2(6) = 16.24^*$		$\chi^2(7) = 16.43^*$	

Note: * $p < .05$; ** $p < .01$

Social value orientation. Participants' scores on the SVO measure served to divide them into the four categories of social value orientation.⁹ Only two participants fit the altruist category, and four were found to have a competitive orientation. The rest of the sample consisted of 316 prosocials and 99 individualists. Because of the low number of competitive and altruistic participants, the following analysis included only participants in the prosocial and individualistic categories. A hierarchical negative binomial regression with a log link function tested the effects of the goal and guilt manipulations, participants' SVO scores and all interactions between these variables on task effort. The analysis did not find any significant effects involving SVO, $|b| \leq .01$, $p \geq .42$, suggesting that SVO does not moderate the relationships between emotion and goal.

⁹ See Murphy et al. (2011) for the formula for calculating an individual's SVO score and for determining one's SVO category.

Discussion

The results of Experiment 3 provide several insights. First, the positive relationship between guilt proneness and effort on the individual task is consistent with previous findings that highly guilt-prone individuals exert greater task effort than those who are less prone to guilt. But when the goal of the task was competitive, the relationship became negative and non-significant. This finding presents an intriguing link between competition, motivation, and an individual trait, which can help distinguish the more competitive people from the less competitive ones and predict individual motivation in different contexts.

Although both state guilt and guilt proneness produced the same interaction effect with competition on task motivation, the simple effects within the interaction were not entirely consistent. When guilt was experimentally manipulated, its negative effect on competitive motivation was larger than its positive effect in the individual setting. Guilt proneness, on the other hand, was associated with significantly higher effort on individual tasks, but its negative effect on competitive motivation was non-significant. Thus, the effect of the personality trait proved to be more stable than the typically ephemeral effect of experimentally manipulated emotion. Assigning a competitive goal was enough to completely reverse the effect of the guilt manipulation on motivation. Guilt proneness, on its part, may have had two contrasting effects on competitive motivation, by increasing the desire to complete the task successfully as well as the aversion to defeat the counterpart.

Finally, consistent with the findings of Experiment 2, the present results suggest that the negative association with competitive motivation is unique to guilt. Unlike guilt proneness, shame proneness was unrelated to motivation in either individual or competitive settings. Together with Experiments 1 and 2, Experiment 3 establishes the association between motivation and guilt, both as an emotional experience and as an individual tendency.

The next two experiments, 4 and 5, investigated the role of the conflict between personal and prosocial goals in the relationship between guilt and motivation in competition. The experiments tested the proposition that guilt results in lower competitive motivation because achieving a personal goal in a competition harms prosocial goals, and vice versa. These experiments compared standard competitions

with modified competitive settings that do not stress the goal conflict. Experiment 4 distinguished between a full, zero-sum competition, in which competitors' outcomes are interdependent and mutually exclusive, and a quasi-competitive setting, in which competitors' performance was compared with that of others, but did not affect their welfare or chances of success. Experiment 5 tested the effect of aligning competitive success with a prosocial outcome in order to attenuate the goal conflict. In one competitive setting, winning the competition benefitted only the winner, whereas in the other, the winner's prize included a charitable donation.

Experiment 4

In Experiments 1-3, guilt and competition interacted to reduce task motivation. Experiments 4 and 5 sought to identify the underlying process of this harmful effect, and test the prediction that the conflict between personal and prosocial goals are responsible for reduced competitive motivation. To this end, the experiments used a moderation-of-process experimental design (Spencer, Zanna, & Fong, 2005), which provides experimental rather than correlational evidence for the causal role of process variables by directly manipulating the proposed mechanism (Adam, Shirako, & Maddux, 2010). Experiments 4 and 5 manipulated personal-prosocial goal conflict by comparing two competitive goals, one that includes such a conflict and one that does not.

As noted above, competition involves two or more people who vie for a mutually exclusive achievement outcome (Johnson & Johnson, 1989). A performance-based competition combines two goals for the individual. One is to achieve better performance than do other competitors. The other is to gain exclusive status or a scarce resource, which both the individual and the competitors seek. The latter goal links between achieving the desired outcome and harming others' outcomes, and creates a conflict with one's prosocial motivation. But outperforming another person, in and of itself, does not cause that person harm, except when the competitors' outcomes are interdependent. When one's result has no material or social consequences for others, the personal goal does not contradict one's prosocial goal. In this case, guilt is not expected to decrease competitive motivation.

Experiment 4 separated the motivation to defeat others in a competition from the motivation to outperform them, and tested the two motivations separately. Participants received the goal either to defeat other participants in a competition, or to outperform participants from an earlier study who were not competing with them. The experiment tested the effects of both guilt and shame, using a scenario manipulation. The prediction was that the goal to defeat others would harm motivation in the guilt condition but not in the shame or neutral conditions, and that this effect would disappear when outperforming others does not cause them harm.

Experiment 4 measured participants' motivation by their willingness to pay to improve their likelihood of success. Participants completed the same object estimation task as in Experiments 1 and 3, but rather than click a button to get additional opportunities to view the objects, they paid to extend their viewing time. Their motivation was measured by the amount of money they were willing to pay for prolonging their exposure to the objects. The design and hypotheses of the experiment were preregistered online: <https://aspredicted.org/blind.php?x=ud9vw2>.

Method

Participants and procedure. Three hundred Prolific.ac workers ($M_{age} = 27.42$, 148 females) completed the experiment in exchange for £0.80 each and a chance to win a £6 bonus. The sample size was determined based on a power analysis of a medium-size effect with 90% power, which suggested a sample of 264 participants. Similarly to the previous experiments, Experiment 4 consisted of an emotion manipulation and an estimation task, which measured participants' motivation. In addition to emotion, the goal associated with the task was manipulated. Each participant was randomly assigned to one of six groups, in a 3 (emotion: guilt/shame/neutral) \times 2 (goal: defeat others/outperform others) design.

Emotion manipulation. The experiment began with a scenario-based emotion manipulation and manipulation check. The scenario was based on an item from the GASP scale (Cohen et al., 2011), with several modifications for manipulating guilt and shame. In the guilt and shame conditions, the scenarios began as follows:

Imagine you are invited to a housewarming party of a coworker who has recently moved to a new house. The house is very nice, with fancy new furniture and carpets. During the party, you go to refill your glass of red wine. You accidentally spill some of the wine on your coworker's new cream-colored carpet, causing an ugly stain. Without thinking, you cover the stain with a chair so that nobody notices your mess.

In the guilt condition, participants read the following conclusion of the scenario:

Before you leave, you think that this behavior is really not something that you would normally do. You think about your coworker finding the stain and that no one knows it was you who did it, and this makes you feel guilty.

Participants in the shame condition read the following conclusion:

But someone sees what you are doing and calls attention to it. Soon everyone is talking about how you ruined the carpet and tried to hide it. Before you leave, you think that how you acted is very typical of you. You think about your coworkers laughing at you, and this makes you feel ashamed.

The scenario in the neutral condition read:

Imagine you are invited to a housewarming party of a coworker who has recently moved to a new house. The house is very nice, with fancy new furniture and carpets. During the party, a person you don't know goes to refill his glass of red wine. That person accidentally spills some of the wine on your coworker's new cream-colored carpet, causing an ugly stain. He covers the stain with a chair so that nobody notices the mess, but someone sees what he is doing and calls attention to it. Soon everyone is talking about how that person ruined the coworker's carpet and tried to hide it.

The scenario was followed by a manipulation check. Similarly to Experiment 3, the manipulation check measured reactions and attitudes that are specific to guilt and shame. Its items were presented on a 9-point scale, ranging from "not at all" to "very much", unless specified otherwise. Two items measured guilt-related empathic concern and constructive response intentions. Participants rated the extent to which they would share the feelings of the coworker who hosted the party and the extent to which they would

feel capable of making the situation better. Two other items measured shame-related withdrawal intentions and negative evaluations of the self. Participants rated how favorably they would judge their character and qualities considering everything that happened (on a scale ranging from unfavorably to favorably) and whether they would want to spend some time alone. An additional item distinguishing between guilt-related focus on one's behavior and shame-related focus on the self was administered only to the guilt and shame groups. Participants in these groups reported the degree to which they would feel more like a stupid person (the label of the lower end of the scale) vs. a good person who has done something stupid (the label of the higher end). Finally, all participants completed two items measuring positive affect, by rating how happy and relaxed they would feel in the situation described. The order of all items was randomized between participants.

Goal manipulation. After the emotion manipulation, participants completed the same object estimation task used in Experiment 3, with one essential difference. Instead of clicking on a button to view the stimuli, participants paid for extended viewing time. Each round began with a 1-second preview of the stimuli. Participants were told that the objects would appear again for one second, but they could use their prospective bonus to extend the time the objects will remain visible, for the price of £0.10 per second, up to a maximum of ten additional seconds. The task consisted of five rounds, therefore participants could forgo up to £5 of their £6 bonus for added exposure time. Participants indicated the amount of money they were willing to pay, and actual payment was made only if they won the bonus; if they did not win they ended up paying nothing. Each correct choice of the most frequent object type earned participants one point. Each estimate of the total number of objects that was within four units of the correct number earned participants an additional point.

Half the participants received the goal to defeat others. They were assigned to dyads, and the member of each dyad who earned more points was declared the winner and entered the draw for the prize. The other half received the goal to outperform a participant from a group that had previously completed the task as part of another experiment. In order to achieve their goal and enter the draw for the bonus, participants needed to earn more points than the person who had achieved the median score in that group. They did not know in advance how many points they would need to earn to achieve their goal. To ensure

participants understood the instructions, they had to correctly answer a comprehension question. In the outperform condition, the question asked “What happens if you do not succeed on the task?” The alternative answers were “I will not be eligible to receive the bonus” and “I will have to do another task”. In the defeat condition, the question was “What happens if you lose the competition?” The alternative answers were “Another participant will become eligible to receive the bonus” and “I will have to do another task.” Nineteen of the 300 participants initially answered the question incorrectly and were made to read the instructions one more time before they all provided the correct answer.¹⁰ As in previous experiments, participants received no performance feedback during the task.

Measures. Motivation was measured by participants’ willingness to pay to extend the exposure time of the stimuli before providing an estimate. The experiment also provided measures of the average absolute error in participants’ estimates of the total number of objects and the number of points they earned.

Results

The experiment used three preregistered criteria for excluding participants from the dataset. The first criterion was skipping the emotion manipulation, similarly to Experiments 1 and 3. Six participants who clicked to proceed less than one second after the presentation of the scenario were removed from the dataset. The second criterion identified suspected cheaters. Participants who spent more than one minute on the estimation page in a certain round after the stimuli had been presented and achieved perfect estimation performance for that round were suspected of taking a screenshot of the stimuli to circumvent the exposure time limit. Twelve participants were removed based on this criterion, including one who also skipped the manipulation. The final exclusion criterion was outlier values of willingness to pay. No participants were removed based on this criterion. Including all participants in the analyses did not affect any of the results. The final sample included 283 participants.

¹⁰ All nineteen participants who answered the comprehension question incorrectly the first time provided a correct answer after one additional reading of the instructions. Excluding them from the analyses did not affect the results.

Manipulation check. A multivariate ANOVA on the guilt and shame items measured the effect of the manipulation on those emotions. The MANOVA also included a planned contrast comparing the guilt and shame conditions. The analysis found significant differences between the groups in all emotional responses, $F(2, 280) \geq 4.60$, $p \leq .01$, partial $\eta^2 \geq .03$. Planned contrasts found that participants in the guilt condition felt higher empathy toward the person who was hurt by their actions ($M = 6.86$, $SD = 1.58$) and higher ability to improve the situation ($M = 6.60$, $SD = 1.75$) than participants in the shame condition (empathy: $M = 6.15$, $SD = 1.91$; ability: $M = 5.36$, $SD = 2.07$), $t(182) \geq 2.78$, $p \leq .006$, $d \geq 0.41$. Similarly, the shame group reported greater desire to be alone ($M = 6.87$, $SD = 2.19$) than the guilt group ($M = 5.69$, $SD = 2.31$) and viewed their own character less favorably (shame: $M = 3.01$, $SD = 1.69$; guilt: $M = 3.72$, $SD = 1.97$), $t(182) \geq 2.60$, $p \leq .01$, $d \geq 0.38$. The guilt group also reported focusing more on their behavior (“a good person who has done something stupid”, $M = 5.05$, $SD = 2.52$) whereas the focus of the shame group leaned more toward the self (“a stupid person”, $M = 4.18$, $SD = 2.69$), $t(182) = 2.27$, $p = .02$, $d = 0.34$. The neutral emotion group reported lower levels of empathy ($M = 6.21$, $SD = 1.88$) and ability ($M = 5.03$, $SD = 2.08$) than the guilt group, $t(192) \geq 2.61$, $p \leq .01$, $d \geq 0.38$, as well as lower desire to be alone ($M = 4.25$, $SD = 2.40$) and a more favorable view of their character ($M = 5.89$, $SD = 1.59$) than the shame group, $t(186) \geq 7.78$, $p < .001$, $d \geq 1.14$. The neutral emotion group also reported feeling happier and more relaxed than the guilt and shame groups, $F(2, 280) \geq 26.28$, $p < .001$, partial $\eta^2 = .16$.

Effects of emotion and goal. On average, participants were willing to spend £1.10 ($SD = 1.41$) to extend their viewing time of the stimuli before estimating. The distribution of this measure was highly skewed (*skewness* = 1.45, *SE* = 0.15), and was therefore subjected to a log(10) transformation.¹¹ A 3×2 between-subjects ANOVA on willingness to pay found a significant Emotion \times Goal interaction, $F(2,277) = 6.35$, $p = .002$, partial $\eta^2 = .04$, with no significant main effects, $F < 1$. As predicted, simple effects tests found that participants who read the guilt scenario were willing to pay significantly more in order to outperform others not involved in a competition than they were to defeat direct competitors. In the neutral condition, direct competition had a significant, positive effect on willingness to pay, $t(97) = 2.54$, $p = .01$, $d = 0.51$. No significant effect of competition was observed in the shame condition, $t < 1$. Within goal

¹¹ Because values of 0 cannot undergo a log(10) transformation, a value of 1 was added to all amounts before the transformation.

conditions, one-way ANOVAs found a significant between-groups difference in the motivation to defeat a counterpart, $F(2,133) = 4.36, p = .01$, partial $\eta^2 = .06$, and a marginally-significant difference in the motivation to outperform an unrelated individual, $F(2,144) = 2.49, p = .09$, partial $\eta^2 = .03$. Planned comparisons tested the effect of guilt on motivation within each task. As Table 4 shows, guilt decreased participants' motivation to defeat their competitors, $t(133) = 2.75, p = .007, d = 0.48$, whereas its effect on the motivation to outperform an unrelated individual was positive, but non-significant, $t(144) = 1.57, p = .12, d = 0.26$. The shame group was not significantly different from the neutral group in the motivation to achieve either type of goal, $t \leq 1.58, p \geq .12, d \leq 0.26$.

Table 4. Mean willingness to pay, in GBP, for extending viewing time before estimating in Experiment 4. Standard deviations are in parentheses.

Measure	Condition	Neutral	Shame	Guilt
Willingness to pay	Defeat	1.33 (1.50)	1.15 (1.28)	0.64 (1.02)
	Outperform	0.82 (1.30)	1.17 (1.43)	1.47 (1.71)
Willingness to pay (log(10) transformed) ¹	Defeat	0.87 (0.57)	0.75 (0.63)	0.52 (0.56)
	Outperform	0.57 (0.60)	0.76 (0.61)	0.84 (0.64)

There were no predictions concerning direct effects on participants' outcomes on the tasks. Participants' point totals at the end of the experiment correlated significantly with their willingness to pay to extend viewing time ($r = .300, p < .001$) but the average error of their estimates did not ($r = -.087, p = .15$). Participants earned, on average 4.43 ($SD = 2.07$) out of 10 possible points and their estimates of the total number of objects missed the mark by an average of 10.09 units ($SD = 6.93$). A Poisson regression model with dummy variables coded for the guilt and shame conditions did not find any significant direct effects on the points participants earned, $b \leq .27, p \geq .11$. A univariate ANOVA on average estimate error did not find any significant effects, either, $F \leq 1.86, p \geq .16$.

Discussion

Experiment 4 found that guilt reduces the motivation to achieve better results than others only when the achievement comes at the expense of others' welfare. When outperforming another person meant

that person would lose, guilty participants were not highly motivated to win. But when their performance had no consequences for others, guilty participants were willing to spend significantly more resources to achieve their goal, even when this meant they would gain a favorable comparison with someone else.

Experiments 2, 3, and 4 compared the effect of guilt to that of shame, the emotion most similar to it. The experiments elicited emotion by recalling a real emotional experience as well as by imagining such an experience in a hypothetical scenario, whereas Experiment 3 also measured proneness to guilt and shame. The three experiments yielded a consistent finding: Guilt can increase the motivation to achieve individual goals but may reduce the motivation to achieve competitive ones. All three experiments also found no relationship between shame and competitive motivation.

The results of Experiment 4 shed light on the nature of competitive motivation. Guilty participants were not averse to achieving favorable comparisons with others. Only when their efforts were beneficial to themselves but harmful to others did their motivation decrease. If the detrimental effect of guilt on competitive behavior does indeed depend on an unsatisfied prosocial motive, then providing a prosocial incentive to win a competition may increase guilty competitors' motivation to win. Experiment 5 tested this prediction.

Experiment 5

Experiment 5 tested the role of the conflict between personal and prosocial goals, which are associated with guilt, in reducing motivation in competitive settings. Guilt encourages actions that help achieve both personal and prosocial goals, but competition makes one of these goals harmful to the achievement of the other. Experiment 5 tested whether aligning competitive achievement with a prosocial outcome, so that attaining both goals is possible, can override the negative effect of guilt on the desire to win.

Competition is a cause of strain on the relationship between winners and the counterparts they outperformed (e.g., Santor & Zuroff, 1998). As previously noted, guilt makes people particularly averse to this state. An opportunity to behave prosocially, for example by sharing the winner's benefit with others, may reduce the discomfort associated with the outcome (Zell & Exline, 2010). Experiment 5 tested

whether such an opportunity, in the form of donating part of the winner's prize to charity, can affect the behavior of guilty competitors. Winning the competition would still mean that someone else must lose; but the prosocial benefit it creates could reduce the uneasiness caused by the counterpart's loss.

Experiment 5 measured participants' goal-achievement motivation by the diligence they exhibited on a precision task. The experiment manipulated guilt, as well as the prosociality of the competitive outcome. Following an emotion manipulation, all participants engaged in dyadic competitions. One group took part in a winner-takes-all competition, with a monetary prize to be paid in its entirety to the winner, whereas the other group competed for a prosocial goal, which included donating half the winner's prize to a charity of his or her choice. Competitors in the guilt condition were expected to be sensitive to the prosocial component of the competition, by working harder when winning the competition satisfies both an individual achievement goal and a prosocial goal.

Method

Participants and procedure. One hundred eighty Amazon.com Mechanical Turk workers residing in the US (73 females, $M_{age} = 33.9$) participated in a "study on memory and perception" in exchange for \$0.45 and a chance to win a monetary prize. A power analysis of a medium-size effect ($f = 0.25$) with 90% power suggested a sample size of 171 participants. Participants were randomly assigned to four groups, in a 2 (emotion: guilt/neutral) \times 2 (prize allocation: keep all/donate) design.

Guilt manipulation. Participants completed the same guilt manipulation and manipulation check as in Experiment 1. In the guilt condition, participants read a hypothetical scenario designed to elicit guilt, whereas the scenario administered in the neutral condition was designed to not elicit this emotion. The two versions of the scenario are presented in Experiment 1.

Prize allocation manipulation. After the manipulation check, all participants engaged in a dyadic competition that included a series of 40 precision tasks (Gill & Prowse, 2012). Each task included a slider with a marker placed at one end. Participants were asked to drag the marker with the mouse and place it as close as possible to the exact center of the slider. In each dyad, the participant who worked more diligently, that is, placed the markers closer, on average, to their assigned positions, won the competition.

Winners entered a lottery for a monetary prize of \$10. In the keep condition, the winner of the lottery received the full amount of the prize. In the donate condition, the lottery winner received \$5, while the remaining \$5 were donated to a charity of his or her choice. Before the start of the competition, participants in the donate condition chose the charity to which they would like to donate this part of their prize by selecting a charity from a list or specifying a different one.¹² Participants did not receive feedback about either their performance or that of their counterparts during the tasks.

Measures. Motivation was measured by the level of diligence participants displayed on the task. Their work was graded by the distance, in 1/100ths of the width of the slider, between the final position of the marker and the center, with each unit of distance from the center earning the participant a negative point. The more diligently participants worked, the fewer negative points they earned. Participants also completed a short questionnaire at the end of the experiment, which included a few additional measures. These measures and their results appear in the Supplementary Online Material.

Results

Experiment 5 used the same predetermined exclusion criterion for skipping the manipulation as in Experiment 1, which resulted in the removal of three participants. Including these participants in the analyses did not affect the results. Five outliers, who earned between 826 and 1960 negative points (22 standard deviations or more above the mean) were also removed. The final sample consisted of 172 participants.

Manipulation check. To distinguish the effect of the manipulation on guilt from other effects, the mean level of all other emotional response items was calculated ($\alpha = .938$). A mixed ANOVA comparing guilt to the other emotions found a significant Condition \times Emotion interaction, $F(1, 170) = 152.74, p < .001$, partial $\eta^2 = .47$. Following the guilt scenario, participants reported significantly higher levels of guilt ($M = 8.59, SD = 1.06$) than other emotions ($M = 8.00, SD = 1.03$), $t(86) = 6.60, p < .001$, whereas among those who read the neutral scenario, guilt was significantly lower ($M = 2.28, SD = 2.04$) than other

¹² The list included the following charities: UNICEF, The American Red Cross, The Salvation Army, Goodwill Industries International, YMCA of the USA, Greenpeace, Susan G. Komen for the Cure, and the Make-A-Wish Foundation. Participants who preferred to donate to a different charity were asked to type its name in a space below the list.

emotional responses ($M = 3.98$, $SD = 1.83$), $t(84) = 10.39$, $p < .001$. Between-groups comparisons show that the guilt manipulation significantly increased reported guilt, $t(170) = 25.51$, $p < .001$, as well as other negative emotional responses, $t(170) = 17.77$, $p < .001$.

Effects of guilt and goal prosociality. A two-way ANOVA on the number of negative points earned, with guilt and prize allocation as independent variables, yielded a significant interaction, $F(1,168) = 4.44$, $p = .03$, partial $\eta^2 = .03$, with no main effect of either prize allocation $F(1,168) = 1.77$, $p = .18$, partial $\eta^2 = .01$ or guilt, $F < 1$. The interaction remained significant when controlling for all other reported emotions, $F(1,167) = 4.36$, $p = .04$, partial $\eta^2 = .03$. Simple effects tests were conducted within each emotion condition. As shown in Figure 5, the opportunity to donate half their winnings made guilty competitors work significantly more diligently than did competitors who competed only for themselves, $t(85) = 2.18$, $p = .03$, $d = 0.47$. It did not, however, affect the work of competitors in the neutral condition, $t < 1$. Guilt was associated with a marginally-significant decrease in diligence in the winner-takes-all competition, $t(85) = 1.73$, $p = .08$, $d = .38$, but a competitive goal that was also prosocial eliminated the effect, reversing the direction of the difference, which became non-significant, $t(83) = -1.23$, $p = .22$, $d = 0.27$.

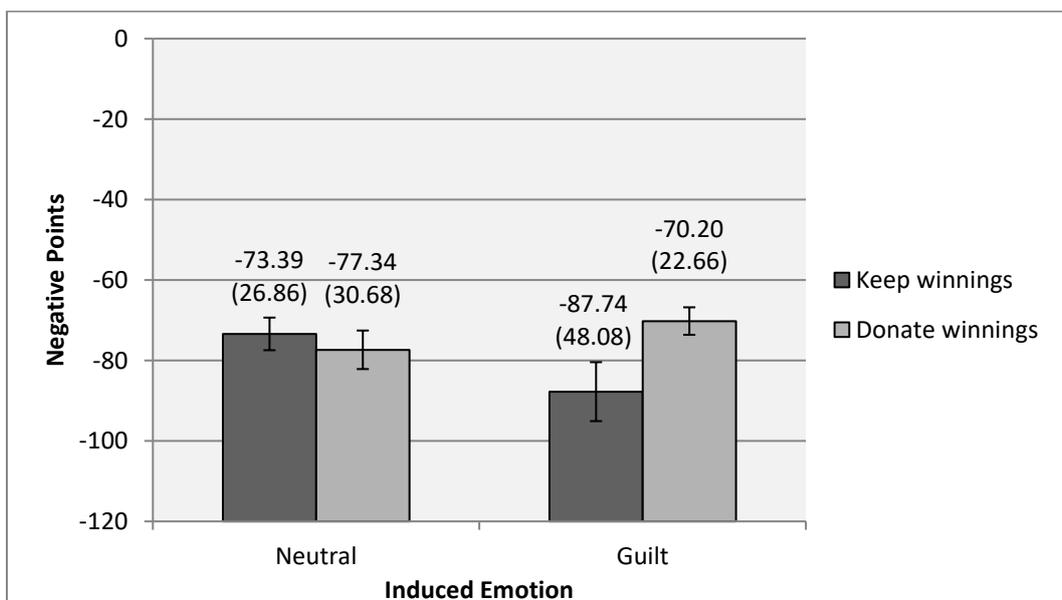


Figure 5. Mean negative points accumulated, by emotion and prize scheme in Experiment 5. Standard deviations are in parentheses. Error bars represent ± 1 SEM.

Discussion

Experiments 1-4 found a negative association between guilt and competitive motivation. In all these experiments, achieving the goal, whether individual or competitive, benefitted only the achiever. But unlike individual goals, competitive goals are achieved at the expense of another individual's desired outcome. Because guilt motivates both personal and prosocial goal achievement, the conflict between the goals had an inhibiting effect on the motivation of guilty competitors. Experiment 5 introduced a competitive goal that included helping a charitable cause, thus offering competitors the opportunity to accomplish both personal and prosocial objectives. As predicted, guilty competitors who were given this opportunity worked significantly more diligently to achieve their goal than did those who could benefit only themselves by winning.

De Hooge et al. (2011) found that individuals experiencing guilt work to benefit their victims, even at the expense of uninvolved others. The design of Experiment 5 did not include a victim with whom a relationship needed repair, but did involve a newly-formed, ad hoc competitive relationship. Participants in the guilt condition seemed less motivated to help themselves at the expense of their counterparts, but the opportunity to benefit others, even by acting against the interest of their counterparts, motivated them to work harder. Together, these results suggest that individuals may attempt to alleviate guilt feelings by behaving prosocially, even if not everyone can benefit from their prosocial actions.

General Discussion

The literature on guilt and guilt proneness documents numerous ways in which this emotion helps the achievement of personal goals by increasing commitment, engagement, and productivity (Brockner et al., 1985; Flynn & Schaumberg, 2012). Guilt also enhances interpersonal relationships by increasing empathy and prosocial behavior (Nelissen, 2014). The present research investigated the effects of guilt when personal and prosocial motives run counter to one another in the context of competition. Although competitive settings enhance task motivation (e.g., Locke, 2007), they also create an inevitable conflict between personal and prosocial goals (Hyland, 1989). This work tested the prediction that guilt, which promotes both types of goals, is associated with lower task motivation in competitions.

The findings reported here support the hypothesis. Individuals who had undergone a guilt manipulation exhibited lower motivation on tasks associated with competitive goals than on tasks associated with individual goals. Similarly, trait-level guilt proneness, which is generally associated with higher task engagement, lost its positive effect on effort when the goal was competitive. The experiments reported here used both scenarios and recall tasks to elicit guilt, and measured various manifestations of goal achievement motivation. Experiments 1 and 3 measured task effort, Experiment 2 measured persistence, Experiment 4 measured participants' willingness to pay to increase the likelihood of achieving their goal, and Experiment 5 investigated diligence in their work. Guilt and competition had the same effects on all these displays of motivation.

Although guilt is related to other negative emotions, the present research found that the reduction of motivation stems from the contradiction between personal and prosocial goals, which are specifically emphasized by guilt. Experiments 2, 3, and 4 compared the effects of guilt with those of shame. Both shame and guilt are self-conscious moral emotions, evoked by similar events. But whereas guilt promotes both personal and prosocial motivations, shame is associated with greater focus on the self and with the motivation to preserve one's sense of self-worth, and does not enhance prosocial goals (Tangney, 1995). As predicted, shame did not exhibit the same relationship with competitive motivation as did guilt. Experiment 5 attenuated the conflict between prosocial and personal goals in a competition by coupling competitive goal achievement with the prosocial outcome of a charitable donation. Guilty competitors worked significantly more diligently when their competitive success also benefitted others than when the achievement of the goal benefitted only them.

The present research used a moderation-of-process design to establish a causal link between guilt and reduced competitive motivation in the conflict between one's personal and prosocial goals (Spencer et al., 2005). Experiments 1-3 found that guilt was associated with lower motivation to achieve competitive goals than individual ones. Experiments 4 and 5 revealed that this relationship depends on whether one's personal achievement entails harming another person without satisfying an alternative prosocial objective. When the goal of outperforming others did not affect others' personal outcomes (in Experiment 4), or

when winning the competition provided prosocial benefits (in Experiment 5), competitive goals had no adverse effect on the motivation of guilty participants.

Theoretical Implications

The results reported here expand our understanding of the relationship between competitive goal setting and motivation. Earlier studies of competition have found some negative effects of competitive goals on individuals' subjective wellbeing and material welfare (e.g., Bazerman & Samuelson, 1983; Harbring & Irlenbusch, 2008), but they have not examined the conditions in which competition directly reduces, rather than increases, the motivation to succeed. The present research contributes to the discussion on the effects of competition on motivation by identifying an important moderator of this relationship.

The present work also contributes to the study of moral emotions by uncovering the motivational mechanism of guilt and its effect on behavior. The theoretical view of guilt has evolved into a complex conceptualization: guilt is an unpleasant emotion, which on one hand stems from negative evaluations of one's actions, but on the other may serve as a catalyst to positive goal-directed behavior both for the self and for others. By testing personal and prosocial goals together, the present work found that the fit between achieving the former and achieving the latter determines the level of motivation and engagement. When attaining a goal does not interfere with either personal or prosocial motives, guilt increases the motivation to achieve the goal, but when the two motives contradict each other, guilt may harm goal achievement.

Recent research (e.g., Cohen et al., 2012) suggests that guilt proneness is part of a person's moral character. Consistent with this proposition, the present findings suggest that guilt inhibits the individual's desire to benefit at the expense of others. This tendency increases the willingness of guilty or highly guilt-prone individuals to cooperate with others, and at the same time decreases their level of competitiveness. Experiment 5 demonstrated that guilt can increase output in competitions if an opportunity to use the competitive goal for prosocial purposes is available. When winning a competition satisfied a prosocial objective, competitors exhibited higher levels of diligence and produced work of higher quality.

One challenge the present research faced stemmed from the fuzzy boundaries between the experience of guilt and that of other emotions. In the experiments reported above, the manipulation of guilt was associated with higher reported levels of other negative emotions as well. Some of these emotions (sadness, fear, anger, disappointment, dissatisfaction) are not related to prosocial motives, therefore there is no reason to expect them to affect motivation in competition but not in individual settings, or vice versa. Other emotions, namely shame and regret, have been linked in previous research to prosocial behavior (e.g., Breugelmans, Zeelenberg, Gilovich, Huang, & Shani, 2014), and both are also strongly related to guilt. Shame stems from similar experiences to those that elicit guilt, but the two emotions differ on some clearly defined theoretical constructs, which enables an empirical comparison of their effects. Experiments 2, 3, and 4 included such comparisons. Because shame promotes focus on the self and does not increase reparative behavior and concern for others, it was not expected to inhibit competitive motivation. As predicted, the experiments found that shame did not generate the same effect as guilt. Unlike shame, the defining lines between regret and guilt are not entirely clear. The theoretical definitions of regret are similar to those of guilt (Gilovich & Medvec, 1995), and definitions of guilt view feelings of regret as part of the guilt experience (Jagacinski & Nicholls, 1984; Smith, Webster, Parrott, & Eyre, 2002; Tangney, 1991; Tangney et al., 2007). Furthermore, most assessment tools of guilt use regret as a measure of guilt (e.g., Harder & Zalma, 1990; Schmader & Lickel, 2006; Tangney, Dearing, Wagner, & Gramzow, 2000). Thus, while the guilt manipulations seem to have also affected regret, the two responses may refer to largely overlapping emotional experiences, as suggested by empirical and theoretical literature on these two emotions.

Practical Implications

The findings presented here have potentially important implications for those interested in motivating workers and students, and in designing incentive schemes. The literature provides abundant examples of competitive settings that are beneficial to performance (e.g., Blanes i Vidal & Nossol, 2011; Brown et al., 1998; Erev et al., 1993), as well as of some that could result in suboptimal outcomes (e.g., Bazerman & Samuelson, 1983; Deci, Betley, Kahle, Abrams, & Porac, 1981). The present article complements these findings by demonstrating a direct effect of competition on motivation and by

presenting a simple boundary condition that determines the direction of this effect. When individuals who are guilt-prone or who feel guilty are involved, competitive goals might be detrimental to goal achievement motivation, but prosocial goals could be helpful. Framing the competitive goal in prosocial terms can help increase motivation, by enabling individuals who feel guilty, or who anticipate such feelings, to reap the personal benefits of competitive achievement while satisfying their concern for others' welfare. Conversely, people who are less prone to experiencing high levels of guilt may thrive in competitive situations. When the task requires taking on other challengers, these individuals are likely to be driven to excel.

Another area where guilt and competitiveness may interact to improve performance is group competition. Competing as part of a group can easily be construed as a prosocial action. Research has found that intergroup competition can improve individual performance and eliminate the productivity losses associated with collective rewards (Erev et al., 1993; Mulvey & Ribbens, 1999). If competition between groups increases the collaborative efforts of group members, it may be possible for groups to enlist their members' guilt to increase their individual efforts in trying to defeat rival groups.

Directions for Future Research

The present research found a consistent effect of guilt on behavior in competitions. To conduct a clean comparison with non-competitive settings, participants competed in dyads arranged ad hoc, which controlled for their knowledge and familiarity with one another. The competitive tasks were performed individually, rather than head-to-head, making them akin to an archery competition, rather than to a tennis match, in the sense that participants' efforts did not directly affect their competitors' performance. Future research should test the generalizability of these findings to other forms of competition, such as auctions, multi-player tournaments, and rivalries.

Future work should also examine the magnitude and boundaries of the effects of guilt on motivation in real-life cases, with higher stakes than the ones present in this research. Several works have documented how guilt and guilt proneness determine various outcomes at work (e.g., Brockner et al.,

1985; Cohen et al., 2016, 2013; Schaumberg & Flynn, 2012). The present studies found that these effects reverse for competitive goals in laboratory settings, and this pattern should be tested similarly in the field.

Conclusion

This research integrated competition and guilt, and tested their effects on goal-directed behavior. The findings suggest that the two factors may be incompatible. Guilt promotes personal goals, but also concern for the welfare of others. In competition, when one's goal includes preventing others from attaining their desired outcome, one must repress concerns for others in order to be successful. Consequently, the experience of guilt, or the individual proneness to it, reduces the desire to win. Yet, when the harm done to one's competitors by defeating them can be offset by prosocial behavior toward others, guilt may again prove helpful for maintaining high levels of motivation. Aligning the virtue of competitive excellence with that of prosocial behavior can harness the power of guilt to attain competitive goals.

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