

Strategies of self-regulation in goal attainment versus goal maintenance

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Abstract

We propose that there exists an important difference between attainment and maintenance in terms of the goal pursuit strategies for which they call. Specifically, we propose that goal attainment calls for the use of eager approach strategies, whereas goal maintenance calls for the use of vigilant avoidance strategies. We distinguish between attainment versus maintenance as two different goal pursuit conditions on the one hand, and promotion versus prevention focus as two different self-regulatory concerns on the other hand. We then use insights from Regulatory Fit Theory to make predictions concerning the interactive effects of these two motivational dimensions on outcome valuations. Consistent with our proposal about attainment and maintenance, we found that participants in a promotion focus valued the outcome of an attainment task more than did participants in a prevention focus, whereas the opposite was true for a maintenance task. Implications for maintenance-related phenomena such as belief perseverance effects are subsequently discussed. Copyright © 2006 John Wiley & Sons, Ltd.

This article is concerned with the psychology of two distinct conditions of goal pursuit: *attainment* and *maintenance*. Traditionally, much of the literature on goal pursuit has emphasized the former by focusing on what happens when people are in the condition of trying to *attain* their goals (see Atkinson, 1957; Latham & Locke, 1991; Lewin, Dembo, Festinger, & Sears, 1944, for examples). Underlying this work has been the assumption that a substantial part of self-regulation consists of setting goals, generating plans, and then executing those plans so as to bring about previously unattained outcomes. But attainment is not the only goal pursuit condition in which people often find themselves. Instead, people also often find themselves in a condition where they must *maintain* the states that they have already achieved. Thus, people employ strategies such as devaluing alternative romantic partners and giving greater weight to positive relationship features as a way of *maintaining* established romantic

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attachments (Johnson & Rusbult, 1989; Lydon, Meana, Sepinwall, Richards, & Mayman, 1999; Neff & Karney, 2003; Simpson, Gangestad, & Lerma, 1990), and they employ a variety of other strategies as a way to *maintain* desired feelings and beliefs about the self (Tesser & Cornell, 1991; Tesser, Crepez, Collins, Cornell, & Beach, 2000; see Cialdini et al., 1976; Liu & Steele, 1986; Pemberton & Sedikides, 2001; Reeves & Tesser, 1985; Steele & Liu, 1983; Swann, Pelham, & Krull, 1989; Swann & Read, 1981; Swann, Stein-Seroussi, & Giesler, 1992; Swann, Wenzlaff, Krull, & Pelham, 1992; Tesser, 1980; Tesser & Smith, 1980 for examples).

The attainment-maintenance distinction is a distinction between two types of goal pursuit conditions that vary in their relation between the actor's current state and his or her desired end-state. In the condition of attainment, the current state is negatively discrepant from the desired end-state, and strategies need to be carried out that will move the individual toward the desired end-state. By contrast, in the condition of maintenance, the current state is already equal to the desired end-state, and strategies need to be carried out that will permit the individual to remain at the desired end-state. Within both attainment and maintenance, a desired, positive end-state is the reference point or comparison standard for the individual's goal pursuit. Moreover, both attainment and maintenance relate to *positive* outcomes (to be attained or maintained). What varies between these two goal pursuit conditions is simply the position of the individual's current state in relation to his or her desired end-state: The current state is discrepant with the desired end-state in attainment, but congruent to it in maintenance.

Given that attainment and maintenance differ in terms of people's relations to their desired end-states, it seems reasonable to suspect that these two conditions should also differ in terms of the types of goal pursuit strategies for which they call. Specifically, because attainment involves a discrepancy between a current state and a desired end-state which the individual must close, attainment should call primarily for a strategy of *bringing about additions*, or, more specifically, for *eager strategies of approaching* (i.e., advancing towards) outcomes that maximize end-state matches. By contrast, because the condition of maintenance involves a congruency between a current state and a desired end-state which the individual must preserve, maintenance should call primarily for a strategy of *stopping subtractions*, or more specifically, for *vigilant strategies of avoiding* outcomes that yield end-state mismatches. To date, however, little attention has been paid to how attainment and maintenance might differ regarding strategic self-regulation in these two conditions, nor have there been any theoretical analyses that have attempted to distinguish between attainment and maintenance in terms of the types of goal pursuit strategies for which they call.

We attempt to address this gap in the literature by employing a novel experimental paradigm for examining the differences that, we believe, exist between these two goal pursuit conditions in terms of the two types of goal pursuit strategies described above (called *eager approach* and *vigilant avoidance*, respectively). We ground this paradigm in the theory of 'regulatory fit' (Higgins, 2000), a relatively new framework for understanding how value is derived from the degree to which the strategic preferences of an individual's regulatory orientation suit the strategic requirements of a goal pursuit task. According to regulatory fit theory, people sustain their regulatory orientation by using goal pursuit strategies that fit the strategic preferences of that orientation, making people 'feel right' about what they are doing. When people have a positive response to what they are doing, such as a positive response to an object they have chosen or towards a goal they are pursuing, the effect of regulatory fit is to intensify this positive response (Higgins, 2000; see Camacho, Higgins, & Luger, 2003; Cesario, Grant, & Higgins, 2004; Freitas & Higgins, 2002; Freitas, Liberman, & Higgins, 2002 for demonstrations). Studies in which people are asked to choose between two objects using decision strategies that either do or do not fit with their strategic preferences have, in fact, shown valuations of the chosen object to be higher under fit versus non-fit conditions (Avnet & Higgins, 2003; Higgins, Idson, Freitas, Spiegel, & Molden, 2003). Moreover, these effects have been shown to be independent

of such potential mediators as mood, perceived instrumentality, and perceived efficiency (Higgins et al., 2003, Studies 3 & 5), suggesting that it is the influence of a genuine value experience that is responsible for the effects of fit on outcome valuations.

The critical step in using regulatory fit to examine the strategic requirements of attainment and maintenance involves an examination of the interactive effect of these goal pursuit conditions and individuals' regulatory orientation on some outcome variable known to be affected by regulatory fit. If, for instance, eager approach strategies are what are called for in an attainment condition, then positive outcomes that are encountered in that condition should be experienced more positively by someone whose regulatory orientation involves a known preference for eager approach strategies than by someone whose orientation involves a known preference for vigilant avoidance strategies. The opposite is true if vigilant avoidance strategies are what are called for in a maintenance condition. The ability to use this type of crossover interaction to test hypotheses about the strategic pull of two goal pursuit conditions requires, however, that people can be categorized into one of two types of regulatory orientation, and that it is *already known* which type of orientation involves a preference for which type of strategy.

We satisfied this condition below by examining how self-regulation in an attainment versus maintenance condition would affect subsequent outcome valuations by interacting with both chronic (Study 1) and situationally induced (Study 2) differences in people's 'regulatory focus'. According to Regulatory Focus Theory (Higgins, 1997, 1998), different regulatory systems exist for the pursuit of goals which serve different purposes or needs. Goals which serve nurturance needs, and which represent the individual's ideals or 'promotion concerns', are pursued in a *promotion focus*, whereas goals which serve safety needs, and which represent the individual's duties or 'prevention concerns', are pursued in a *prevention focus*. In a promotion focus, self-regulation towards a desired end-state entails a heightened sensitivity to the presence or absence of positive outcomes (Higgins & Tykocinski, 1992). Such a sensitivity leads to a preference for eager approach strategies, as seen in the tendency for promotion-focused individuals to have better memory for instances of strategic approach (Higgins, Roney, Crowe, & Hymes, 1994) and to prefer an eager 'risky' bias in signal detection-like tasks (Crowe & Higgins, 1997; Friedman & Forster, 2001; Liberman, Molden, Idson, & Higgins, 2001). By contrast, self-regulation towards a desired end-state in a prevention focus entails a heightened sensitivity to the absence or presence of negative outcomes (Higgins & Tykocinski, 1992). Such a sensitivity leads to a preference for vigilant avoidance strategies, as seen in the tendency for prevention-focused individuals to have better memory for instances of strategic avoidance (Higgins et al., 1994) and to prefer a vigilant 'conservative' bias in signal detection-like tasks (Crowe & Higgins, 1997; Friedman & Forster, 2001; Liberman et al., 2001).

The promotion-prevention distinction is a broad distinction between an individual's self-regulatory orientations and concerns. Goal attainment and goal maintenance, by contrast, can each involve either promotion or prevention concerns. Indeed, most of the past studies that have tested Regulatory Focus Theory have involved comparisons between participants in the same goal *attainment* condition who then vary in the relative chronic or momentary accessibility of their promotion ideals or prevention oughts (e.g., Forster, Higgins, & Idson, 1998; Higgins, Shah, & Friedman, 1997; Shah, Higgins, & Friedman, 1998). This past research, therefore, is predicated on the assumption that people can have either promotion concerns or prevention concerns while being in an attainment goal pursuit condition. The same argument can be applied to self-regulation in a maintenance goal pursuit condition. As a way of illustrating, consider a student's goal with respect to his or her course grades. Just as getting an 'A' on a final test could be interpreted as something to be accomplished (promotion goal attainment) or as a responsibility to be fulfilled (prevention goal attainment), so, too, could keeping an overall 'A' average in the course be interpreted as something to be accomplished (prevention goal maintenance) or as a responsibility to be fulfilled (prevention goal maintenance).

Neither goal attainment nor goal maintenance determines one's regulatory focus or concerns. Instead, we are proposing that an attainment goal pursuit condition simply calls naturally for the use of eager approach strategies, whereas a maintenance goal pursuit condition calls naturally for the use of vigilant avoidance strategies. Notice, however, that while the promotion–prevention distinction is separate from the attainment–maintenance distinction, the established strategic preferences of promotion and prevention have a clear relation to the hypothesized strategic pull of attainment and maintenance conditions. Both promotion and attainment are presumed in our model to share an association with eager approach strategies during goal pursuit, while both prevention and maintenance are presumed to share an association with vigilant avoidance strategies. Thus, to the extent that our hypothesis about attainment and maintenance is correct, individuals in a promotion focus should experience greater regulatory fit during self-regulation in an attainment task than should individuals in a prevention focus, while the opposite should be true for self-regulation in a maintenance task. This interaction between regulatory focus and condition of goal pursuit (i.e., attainment vs. maintenance) should yield differing degrees of value from fit, which should then be reflected in differing valuations of outcomes resulting from successful attainment or maintenance. In Study 1, we examined this possibility by looking at the effect on outcome valuations of the interaction between attainment versus maintenance and the individual's chronic regulatory focus. In Study 2, we expanded on the results of Study 1 by investigating whether parallel findings would emerge when regulatory focus was manipulated rather than measured.

STUDY 1

Overview

The purpose of Study 1 was to determine whether our hypothesis with respect to differences between attainment and maintenance in the strategies for which they pull would hold up when looking at regulatory focus as a chronic individual difference variable. Following Higgins, Shah, and Friedman (1997), we operationalized regulatory focus in terms of the chronic accessibility of participants' ideal and ought self-guides. Specifically, we measured the response latencies associated with participants' responses to queries about the attributes that described who they would ideally like to be and those that described who they thought they ought to be. We then categorized as promotion-focused those participants whose response latencies were faster for queries about ideals than about oughts, and categorized as prevention-focused those participants whose response latencies were faster for queries about oughts than about ideals. This operationalization follows from the notion that knowledge structures with higher accessibility (i.e., higher activation potential) produce faster responses to knowledge-related inputs (see Higgins, 1996), and that the accessibility of a self-guide is positively related to a tendency to self-regulate in a state associated with that guide. Similar operationalizations have been employed successfully in the literature on attitudes (see Fazio, 1986, 1995), and the self-guide strength measure in particular has been demonstrated to have considerable predictive validity in a number of regulatory focus experiments (e.g., Forster et al., 1998; Higgins et al., 1997, 2003; Liberman, Idson, Camacho, & Higgins, 1999; Liberman et al., 2001; Shah & Higgins, 1997; Shah et al., 1998).

We then had participants work towards an outcome—a prize in the form of a coffee mug—by having them engage in two separate tasks. The tasks were designed to give participants an opportunity to earn tokens, which, if enough were collected, could be exchanged at the end of the experiment for the mug. All participants attained 100 tokens from the first task; for the second task, however, some participants were required to work to attain a new set of tokens under the guise that the first set could not

be used to purchase the mug (the attainment condition), while the remaining participants worked to keep the tokens that they had won in the first task from being taken away (the maintenance condition). All participants succeeded at ending up with enough tokens to purchase the mug; following the purchase, participants filled out a series of questionnaires which included a question about the amount they would have been willing to pay for the mug had they not won it in the experiment but had, instead, seen it in a store for sale (i.e., the mug's judged monetary value).

We predicted that participants who were asked to attain tokens during the anagram task would be willing to pay more for the mug when they were predominantly promotion-focused than when they were predominantly prevention-focused, whereas the opposite would be true when they were asked to maintain tokens they had obtained from a previous task. Thus, we expected there to be a significant interaction between the participants' chronic focus and the condition of goal pursuit (attainment vs. maintenance) to which they had been assigned. This prediction followed from our expectation that an attempt to attain tokens would pull for the use of eager approach strategies and would, therefore, fit better the strategic inclinations of a promotion-focused person than those of a prevention-focused person, while an attempt to maintain tokens would pull for the use of vigilant avoidance strategies and would, therefore, fit better the strategic inclinations of a prevention-focused person than those of a promotion-focused person.

We also measured participants' mood following success feedback on the second task, as well as their judgments about the desirability of the mug as a prize for success. Theoretically, the effects of regulatory fit on outcome value should be due strictly to the confusion between outcome value and the value produced by regulatory fit. They should *not* be due to mood effects or to beliefs that could influence perceptions of outcome desirability. The latter effect is particularly important to rule out, as beliefs about outcome desirability could be utilized as the basis for an *inference* about the outcome's value, and research has already demonstrated that differences in outcome value arising from differences in regulatory fit are *not* mediated by such higher-order cognitive operations (see Higgins et al., 2003). Similarly, mood should have no bearing on the effects of regulatory fit on outcome value, since those effects are supposed to be due to the transfer of a value-from-fit experience rather than to the transfer of any other positively valenced phenomenological state. Therefore, in order to test our hypothesis appropriately, it was important to demonstrate that our findings were not being driven by mechanisms different from those already shown to underlie the transfer of value from regulatory fit. Measuring participants' judgments about the desirability of the mug as a prize for success, as well as their mood, and then entering these measures into our analyses as additional predictors (i.e., potential mediators), allowed us to achieve that objective. In line with both past research (Higgins et al., 2003) and the theory of regulatory fit (Higgins, 2000), we sought to demonstrate that our hypothesized effect would emerge even when mood and prize desirability perceptions were statistically controlled.

Method

Participants

Fifty-six Columbia University undergraduates (23 males, 32 females, and 1 whose gender was unknown) were recruited to take part in the present experiment (No gender effects were found.). Four participants signed up for the experiment in return for partial credit towards the introductory psychology course offered at the university. The rest were recruited by fliers and received \$10 for their participation. One participant was excluded from the analyses because she failed to have complete data on the self-guide strength measure. To ensure that our results would not be unduly influenced by outliers, we also excluded one participant whose mug valuation score was greater than three standard deviations from the grand mean.

Materials

Self-Guide Strength Measure. A computerized version of the Selves Questionnaire (see Higgins, Klein, & Strauman, 1985) was employed to measure the chronic accessibility of participants' self-guides. Like the Selves Questionnaire, the computerized measure asked participants to list traits describing two types of self-representations—their 'ideal self' and their 'ought self'. Specifically, the 'ideal self' was defined as the person participants would ideally like to be, the person they wished or desired to be, while the 'ought self' was defined as the person they should be, the person they believed it was their duty or responsibility to be. Participants were told that they would be listing traits for these two types of self-representations one at a time, and would be asked to rate each trait for: (a) the extent to which they believed they ideally or ought to possess it; and (b) the extent to which they believed they actually possessed it. They were also told not to use a given trait adjective more than once, and to list each trait adjective as quickly and as accurately as they could.

The program then prompted participants to type in one ideal attribute, followed by two ought attributes, another ideal attributes, another ought attribute, and finally, a third ideal attribute. Ideal/ought extent and actual extent ratings were given on 4-point scales immediately following the entry of each attribute (1 = 'slightly', 2 = 'moderately', 3 = 'a great deal', 4 = 'extremely'). For each attribute, the computer recorded the amount of time it took to begin typing in the attribute and the amount of time it took to give each rating. These response latencies were subject to natural logarithmic transformations because their distributions were positively skewed. An index of the chronic accessibility of participants' ideal self-guides was then computed by summing the transformed response latencies across the three ideal attributes and multiplying by -1 so that larger values represented higher ideal self-guide accessibility. Similarly, an index of the chronic accessibility of participants' ought self-guides was computed by summing the transformed response latencies across the three ought attributes and multiplying by -1 so that larger values represented higher ought self-guide accessibility.

Pencil-and-Paper Questionnaires. Questionnaires were constructed to measure participants' beliefs about the mug as a prize, as well as their valuations of the mug and their mood. One questionnaire consisted of four items designed to measure participants' beliefs about the desirability of the mug as a prize for success ('To what extent do you think this is a good prize?' 'To what extent do you want this prize?' 'How much do you like this prize?' 'How aesthetically pleasing is the prize?'). These four items were followed by the critical item designed to measure participants' monetary valuation of the mug ('If we gave you an opportunity to *buy* this prize, how much would you be willing to *pay* for it?'). A second questionnaire consisted of 12 items designed to measure participants' mood following success feedback on the second (i.e., anagram) task. Four of the items described positive emotions ('happy', 'satisfied', 'calm', 'relaxed'), while the remaining eight described negative emotions ('sad', 'disappointed', 'low', 'discouraged', 'agitated', 'tense', 'on-edge', 'uneasy'). With the exception of the mug valuation item, to which responses were given by writing in a dollar amount in a space provided below the item, responses to all other items were given by circling the appropriate value on a 7-point Likert-type scale appearing below each item (from 1 = 'not at all' to 7 = 'very much'). To facilitate delivery of the questionnaires to participants, we put the questionnaires into a single packet, with the order of questionnaires in a given packet being determined at random.

Procedure

Participants were run one at a time or in groups of two to three. After reading and signing a standard consent form, each participant was seated in a separate soundproof booth containing an Apple iMac computer and a table on which pencil-and-paper questionnaires could be completed. Positioned outside

of the booths were several coffee mugs, stacks of red and white poker chips functioning as tokens, and signs taped on the wall that read 'Prize = 70 Red Tokens'. Participants were informed verbally that they would be asked to complete a few questionnaires and then engage in two cognitive tasks. They were also informed that they would have a chance to earn tokens, and that their performance on the cognitive tasks would determine the number of tokens they would earn. Participants were then asked to complete the self-guide strength measure; following this, the experimenter started the computer program that contained the two cognitive tasks.

The first task was a homonym task. Instructions delivered by the computer explained that participants would be exposed to several pairs of words, some of which would sound exactly the same (e.g., 'SEER-SEAR'), others of which would not (e.g., 'PEER-PEAR'). Participants were informed that it would be their job to report, as quickly and as accurately as possible, whether a given pair of words sounded the same or different. After a practice trial, participants were told that the number of correct responses they gave and the speed with which they gave their correct responses would be converted to a percentile score, effectively comparing them to other Columbia University students. It was then noted that this percentile score would be used to determine the number of tokens which the participant would subsequently be awarded. To clarify the relationship between percentile scores and number of tokens awarded, the computer presented a chart, which indicated that scores in the lowest quintile would result in the awarding of 20 tokens and scores in the highest quintile would result in the awarding of 100 tokens. The purpose of relating tokens to percentile scores and connecting those scores to both speed and accuracy data was to make it difficult for participants to gauge their true level of performance.

Once this information was delivered, the test trials began. Each test trial consisted of a row of asterisks presented at the center of the computer screen for 1000 ms, followed by a pair of words, one presented above the other, which stayed on the screen until the participant gave his or her response. Twenty pairs of words were homonyms, 20 pairs were non-homonyms, and the order of pairs was determined at random. Once all 40 trials were completed, the participants were given false success feedback about their performance. Specifically, all participants were told that they had succeeded at scoring in the 91st percentile, entitling them to 100 tokens. Participants whose session was randomly assigned to the attainment condition were then handed a cup containing 100 white tokens, while those whose session was randomly assigned to the maintenance condition were handed a cup containing 100 red tokens.¹ Thus, all participants had a success experience and received an award of tokens.

The experimenter then introduced participants to the second task. For all participants, the task itself and the order in which information was presented was the same. Specifically, a verbal introduction to the task was followed by computerized instructions, a practice trial, information about scoring, test trials, and false feedback about participants' performance. What differed between the attainment and maintenance conditions was the method by which performance would be rewarded. All participants were alerted to the fact that there was a prize—a mug—which they could obtain if they had enough tokens at the end to exchange for it. For those in the 'attainment' condition ($n = 28$), the verbal introduction explained that while the white tokens they had received from the homonym task could not be used to buy the prize, the second task would give them an opportunity to attain a new set of red tokens which could, in fact, be used to buy the prize. Both the verbal introduction and the scoring information delivered by the computer explained that the second task would involve solving anagrams, that each legitimate word found in the anagram strings would allow the participant to attain five new, red tokens, and that the participant had the opportunity to attain a maximum of 100 tokens.

¹We assigned sessions rather than individual participants to conditions so as to avoid the possibility that participants might overhear different instructions being delivered to other participants in the session. (A session was defined in this case as the 1-hour period within which instructions and tasks were delivered to participants.) Given that many sessions consisted of only one participant and that participants were run in soundproof booths (the maximum number of participants in a single session being three), we felt it was appropriate to treat the participants as independent in our statistical analyses.

By contrast, participants in the 'maintenance' condition ($n = 26$) were told that the red tokens they had received could be used to buy the prize, but that, before they could do so, they would first be working in the second task to maintain the tokens they already had. Both the verbal introduction and the scoring information delivered by the computer explained that each legitimate word that was found in the anagram strings would allow the participant to keep five red tokens, and that they had an opportunity to hold onto all 100 tokens from the homonym task.

All participants were then presented with 12 anagrams, two of which had eight possible solutions together, nine of which had 27 possible solutions together, and the last being unsolvable for a total of 35 possible solutions. Each anagram consisted of five letters and was presented on its own screen. Solutions to each anagram were typed into the computer separated by a space, and participants advanced from one anagram to the next by hitting the return key. After all 12 trials were completed, the computer delivered false success feedback about the participants' performance. Specifically, participants in the attainment condition were informed that they had succeeded at attaining 100 new tokens, while participants in the maintenance condition were informed that they had succeeded at maintaining 100 of their original tokens.

After the two computer tasks were completed, the experimenter gave participants an opportunity to exchange their red tokens for the mug. All participants agreed to do so. Following the exchange, participants were handed the questionnaire packet described above, as well as a demographic form and a questionnaire designed to assess participants' reactions to the experimenter's handling of the session, the fairness of the procedures, and what they believed to be the purpose of the experiment. Once these questionnaires were completed, the participants were handed a debriefing form and asked if they had any questions. They were then compensated either with money or course credit depending upon how they had been recruited, and were thanked for their participation.

Results

Recall that we expected participants who were asked to attain tokens during the anagram task to be willing to pay more for the mug when they were predominantly promotion-focused than when they were predominantly prevention-focused, whereas the opposite would be true of participants who were asked to maintain tokens they had obtained from a previous task. In other words, we expected there to be a significant interaction between the participants' chronic focus and the condition of goal pursuit (attainment vs. maintenance) to which they had been assigned.

To test this hypothesis, we subtracted participants' ought self-guide accessibility score from their ideal self-guide accessibility score to produce an index of predominant self-guide strength. Participants whose difference scores were greater than zero were categorized as being predominantly promotion-focused; those whose difference scores were less than zero were categorized as being predominantly prevention-focused.² Twenty-two participants were subsequently classified as predominantly promotion-focused; the rest were categorized as predominantly prevention-focused.³ A 2 (Predominant

²We used this procedure, rather than entering the ideal and ought self-guide accessibility indices as separate continuous predictors, because of the high collinearity that was observed between the two indices (in Study 1, $r = 0.75$; in Study 2, $r = 0.83$). Our concern was that the correlations between the indices would result in unstable parameter estimates for the interactions between the indices and the remaining variables, resulting in lower F -ratios for those effects than would be the case had the collinearity not been present. Although some objection might be leveled at the choice to dichotomize the difference score variable given the information loss or power reduction that occurs when continuous variables are treated categorically, we felt that splitting this variable at the zero point was a theoretically meaningful decision in this case (the zero point being the clear transition from predominant promotion to predominant prevention).

³Of the 22 participants who were classified as predominantly promotion-focused, 10 were in the attainment condition and 12 were in the maintenance condition.

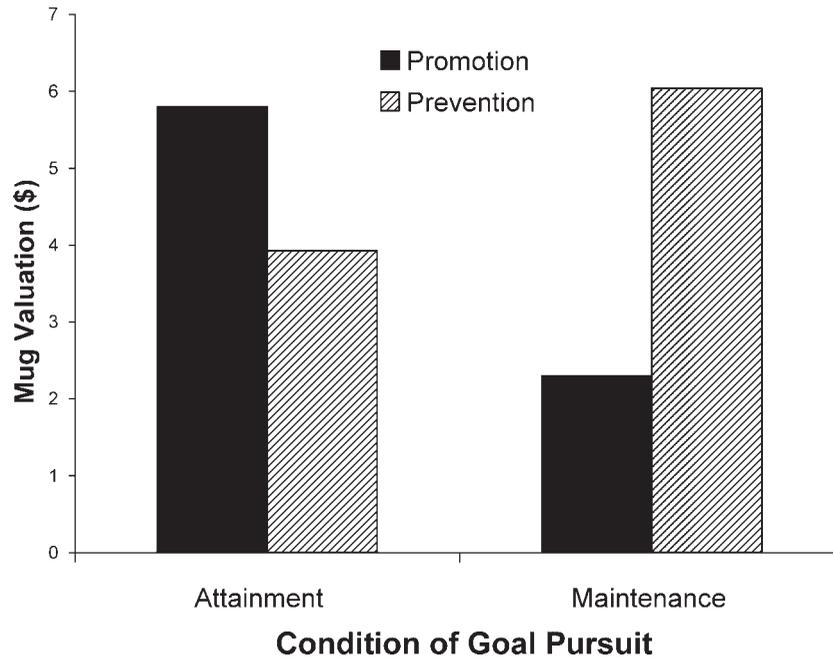


Figure 1. Effects of focus and condition of goal pursuit on mug valuations

Focus: Promotion vs. Prevention) \times 2 (Condition of Goal Pursuit: Attainment vs. Maintenance) ANOVA was then run on the mug valuation measure (i.e. 'If we gave you an opportunity to *buy* this prize, how much would you be willing to *pay* for it?').

This analysis revealed the predicted predominant focus \times condition of goal pursuit interaction, $F(1, 50) = 15.69$, $p < 0.001$, $\eta_p^2 = 0.24$. Figure 1 provides a graphical illustration of the effect. As expected, participants who were asked to attain tokens during the critical anagram task said they would be willing to pay more money to buy the mug when they were predominantly promotion-focused ($M = 5.80$, $SE = 0.80$) than when they were predominantly prevention-focused, ($M = 3.93$, $SE = 0.60$), planned contrast, $t(50) = 1.86$, $p < 0.07$, $\eta_p^2 = 0.06$.⁴ By contrast, participants who were asked to maintain tokens they had obtained from a previous task assigned a higher monetary value to the mug when they were predominantly prevention-focused ($M = 6.04$, $SE = 0.68$) than when they were predominantly promotion-focused, ($M = 2.30$, $SE = 0.73$), planned contrast, $t(50) = -3.74$, $p < 0.001$, $\eta_p^2 = 0.22$. No significant main effects of either predominant regulatory focus or condition of goal pursuit were found.

Next, to determine whether the hypothesized fit-value transfer effect was independent of mood or prize desirability perceptions, the ANOVA was re-run controlling both for beliefs about the desirability of the mug as a prize for success as well as for self-reported mood after the second task. This was accomplished by entering as additional, continuous predictors a single average index of the four items measuring participants' beliefs about the mug's desirability ($\alpha = 0.90$), as well as a single average index composed of all positive and reverse-scored negative emotion ratings ($\alpha = 0.86$). Not surprisingly, exploratory analyses revealed a significant correlation between the prize desirability index and the amount participants stated they would be willing to pay to buy the mug, $r = 0.43$, $p < 0.01$, and also a modest positive correlation between the mug valuation measure and the mood index, $r = 0.21$,

⁴All of the means that are reported throughout this paper are the estimated marginal (i.e., least-square) means from the relevant ANOVA model. Standard errors, rather than standard deviations, are, therefore, reported.

$p = 0.13$. Despite these correlations, the predominant focus \times condition of goal pursuit interaction remained significant after entry of the additional predictors, $F(1, 48) = 11.17$, $p < 0.005$, $\eta_p^2 = 0.19$, with the amount of variance in mug valuations accounted for by the two-way interaction dropping by only a modest 21% (suggesting, at best, only partial mediation by the mood and prize desirability indices). The pattern of means, adjusted for the additional predictors, also remained the same as before.⁵

Discussion

Study 1 provided initial support for our hypothesis. When working on a task to obtain an outcome, participants for whom the task entailed attainment valued the outcome more when they were predominantly promotion-focused than when they were predominantly prevention-focused, whereas the opposite was true when the task entailed maintenance. Indeed, the average amount participants in the two predicted fit conditions (i.e., promotion-attainment and prevention-maintenance) stated they would be willing to pay to buy the mug was *over 81% higher* than the average amount stated by participants in the two non-fit conditions (i.e., prevention-attainment and promotion-maintenance), M 's \$5.94 and \$3.28, respectively. Consistent with the theory of regulatory fit, the effect of regulatory fit on the amount of money that participants said they would be willing to pay to buy the mug was generally independent both of beliefs about the mug's desirability as a prize and of participants' mood. Such a finding is exactly what one would expect if goal attainment were a condition that pulled for the use of eager approach strategies, and goal maintenance were a condition that pulled for the use of vigilant avoidance strategies.

One potential limitation to the first study concerns the manner in which regulatory focus was operationalized. Specifically, we chose to measure participants' pre-existing regulatory orientation by assessing the accessibility of their ideal and ought self-guides rather than to bring regulatory focus under experimental control. One consequence of this decision is that we cannot rule out the possibility that the effect we obtained was due to the interaction between our condition-of-goal-pursuit manipulation (attainment vs. maintenance) and some other individual difference variable that might be correlated with chronic differences in ideal versus ought self-guide accessibility.

Fortunately, promotion and prevention foci are theorized to be states which can arise either from person factors or from temporary situational constraints, and which operate the same way *irrespective* of their source (Higgins, 1998). This theoretical perspective has allowed a number of investigations into regulatory focus theory to replace measures of chronic regulatory focus with experimental regulatory

⁵Because the individual emotion adjectives that went into the mood index were related to elation, quiescence, dejection, and agitation emotions, and because past research has shown those emotions to be differentially related to promotion and prevention self-regulation (Higgins et al., 1997; Idson, Liberman, & Higgins, 2000; Roney et al., 1995), it might be asked whether changes in our predicted effects would have emerged had the ANOVA's been run with the emotion items kept segregated into their respective emotion categories. It might also be asked whether a different result would have emerged had only the positive emotion items been entered, given that participants were exposed only to positive outcomes by being given false success feedback on the anagram task. To address these issues, we computed separate indices for the four types of emotions (α 's = 0.62, 0.70, 0.88, and 0.82 for the elation, quiescence, dejection, and agitation emotion indices, respectively) and used all four of them in place of the single mood index. Each of these indices had only a modest, nonsignificant correlation with the mug valuation measure, for elation and quiescence, r 's = 0.17 and 0.15, respectively; for dejection and agitation, r 's = -0.18 and -0.15, respectively, all p 's > 0.18 . We then re-ran the ANOVA twice, once with all four indices, along with the prize desirability index, entered into the model as additional predictors, a second time with all but the negative emotion indices entered as predictors. The predominant focus \times condition of goal pursuit interaction remained significant in both cases, for the model with all predictors, $F(1, 45) = 10.23$, $p < 0.005$, $\eta_p^2 = 0.19$; for the model with the negative emotion indices removed, $F(1, 47) = 10.68$, $p < 0.005$, $\eta_p^2 = 0.19$, with the amount of variance in mug valuations accounted for by the two-way interaction dropping in both cases by only a modest 22% (suggesting, once again, only partial mediation by the mood and prize desirability indices). Furthermore, the pattern of adjusted means was observed in both cases to be the same as the pattern of means from the original ANOVA model.

focus manipulations, such as having participants think about either their hopes or duties so as to make their ideal or ought self-guides temporarily more accessible (e.g., Freitas & Higgins, 2002; Freitas, Liberman, & Higgins, 2002; Higgins et al., 1994, 2003; Liberman et al., 2001), or having them write about a time in their lives when they succeeded or failed at promotion or prevention self-regulation (e.g., Camacho et al., 2003; Higgins et al., 2001).

One method of experimentally manipulating regulatory focus that has proved successful in the past has entailed framing success and failure at goal pursuit in terms of either gains and nongains (promotion focus) or nonlosses and losses (prevention focus)—the *outcome framing* method. The logic behind this method lies with the notion that the description of end states in terms of the presence or absence of positive outcomes (i.e., gains and nongains) can, itself, induce promotion-focused self-regulation, whereas the description of end states in terms of the absence or presence of negative outcomes (i.e., nonlosses and losses) and induce prevention-focused self-regulation. Several studies have already demonstrated the utility of outcome framing procedures as manipulations of regulatory focus, and have shown them to have predictive validity across a diverse array of materials and experimental procedures (e.g. Crowe & Higgins, 1997; Forster et al., 1998; Forster, Grant, Idson, & Higgins, 2001; Liberman et al., 2001; Roney, Higgins, & Shah, 1995; Shah & Higgins, 1997; Shah et al., 1998).

In Study 2 presented below, we addressed the potential limitation of Study 1 by employing an outcome framing manipulation as a way of inducing participants into a promotion or prevention focus. Specifically, we had participants work towards obtaining a coffee mug using the same two tasks that were employed in Study 1. As in the first experiment, some participants were told that they would engage in the second task as a way of attaining tokens, while other participants were told that they would engage in the second task as a way of maintaining the tokens they had already attained. In addition, some participants in a *promotion framing* condition were told that, so long as they attained/maintained the required number of tokens, they would *gain* the mug, otherwise they would *not gain* the mug. By contrast, other participants in a *prevention framing* condition were told that, so long as they attained/maintained the required number of tokens, they would *not lose* the mug, otherwise they would *lose* the mug.

Our prediction was that participants who were asked to *attain* tokens during the anagram task would be willing to pay more for the mug when they were subject to promotion framing than when they were subject to prevention framing, whereas the opposite would be true of participants who were asked to *maintain* tokens they had obtained from a previous task. That is, we expected there to be a significant regulatory focus frame \times condition of goal pursuit interaction that would parallel the interaction found in Study 1.

As in Study 1, we measured, following completion of the second task, participants' beliefs about the desirability of the mug as a prize for success as well as their positive mood, entering these measures into our analyses as additional predictors. Also measured in Study 2 were participants' judgments about whether attaining or maintaining tokens constituted *efficient ways* of obtaining the prize. Previous research using a decision-making paradigm has demonstrated that regulatory fit effects are independent of perceptions concerning the efficiency of the means utilized to make a decision (Higgins et al., 2003). Once again, this was an important finding for us to replicate, as a failure to do so would conceivably have called into question whether the patterns of valuations observed in the data were being driven by a regulatory fit effect (without which the logic of the experiment as a test of our hypothesis about the strategic difference between attainment and maintenance would be lost). As we felt it was important to demonstrate that the fit-value transfer effect was independent of perceived efficiency in this experiment, we included the measure of perceived efficiency as one of the predictors in our follow-up analysis.

Finally, we once again had participants at the beginning of Study 2 complete the same self-guide strength measure that was employed in Study 1 as a way of identifying them as either predominantly promotion-focused or predominantly prevention-focused. We then included participants' predominant focus as a third independent variable in our statistical analyses. Although we had some reason to believe that a manipulation of regulatory focus would simply overwhelm the contribution to focus of chronic

factors such as the accessibility of participants' self-guides (see Higgins, 1996, for similar findings in the realm of category accessibility), we felt it was important to try to capture any residual fit effects involving chronic focus so as to clarify the regulatory focus frame \times condition of goal pursuit interaction. To the extent that self-guide accessibility still exerted some influence on participants' focus, including the predominant focus variable in our statistical model, and observing its higher-order interactions with the remaining factor variables, provided us with an opportunity to accomplish that objective.

STUDY 2

Method

Participants

One hundred and eighty-two Columbia University undergraduates (84 males, 97 females, 1 unknown) were recruited to take part in the present experiment (No gender effects were found). Participants were recruited by responding to fliers and received \$10 for their participation. Two males and three females were excluded from the analyses because they failed to complete the critical dependent measures. To ensure that our results would not be unduly influenced by outliers, we also excluded one female participant whose mug valuation score was greater than 3 standard deviations from the grand mean.⁶

Materials

The materials were essentially the same as those used in Study 1. The only important exception was the inclusion in Study 2 of a single-item measure of participants' judgments about the efficiency of attaining/maintaining tokens as a way of obtaining the prize ('To what extent did trying to attain/hold onto tokens seem like an *efficient*, i.e., economical, way of getting the prize?'). Two versions of this item were created, one worded in terms of the attainment of tokens, and the other worded in terms of the maintenance (or holding on) of tokens. Responses to this item were given on a 7-point Likert-type scale appearing below the item (from 1 = 'not at all' to 7 = 'very much').

Procedure

The procedures were similar to those used in Study 1. After reading and signing a standard consent form, each participant was seated in a soundproof booth and asked to complete the self-guide strength measure. They were then informed verbally that they would be asked to engage in two cognitive tasks (i.e., the homonym and anagram tasks), that they would have a chance to earn tokens which could be exchanged for a prize (i.e., the mug), and that their performance on the tasks would determine the number of tokens they would earn. Participants in the promotion framing condition were shown the mug, which was then placed right outside of the booth in full view of the participant, and told that, while they would need to have enough tokens to exchange for the mug if they wanted to get it, they

⁶There were two subsamples for this study, one gathered in the spring of 2003 with a total of 91 participants (48 males, 43 females), the other gathered in the fall of 2004 with a total of 85 participants (34 males, 50 females, 1 unknown). (Numbers in these cases reflect the sample sizes after the exclusions mentioned above.) Neither the predominant focus main effect nor the critical regulatory focus framing \times condition of goal pursuit interaction were qualified or meaningfully reduced, however, when a subsample factor was included in the ANOVA models (all F 's $>$ 4.64, all p 's $<$ 0.05), suggesting that the subsample factor could be dropped from the analyses without an appreciable loss of information. We therefore report the analyses with the subsample factor excluded.

would be able to get the mug 'so long as they did well' (e.g., by attaining 100 red tokens) and had lots of tokens at the end. By contrast, participants in the prevention framing condition were handed the mug 'for the time being' and told that they would get to keep it 'so long as they did what was necessary' (e.g., by maintaining 100 red tokens) and had enough tokens at the end.

All participants then engaged in the two cognitive tasks. The tasks and the order in which instructions were delivered were identical to those used in Study 1. Also identical was the method employed to manipulate condition of goal pursuit (n 's 89 and 87 in the attainment and maintenance conditions, respectively). What differed was the addition of a framing manipulation to the instructions for the anagram task. Specifically, right after the verbal instructions were delivered, participants in the *promotion framing* condition ($n = 90$) were reminded of the cost of the prize in red tokens, and told that, while they hadn't gotten the prize yet, they could still *gain* it if they had lots of red tokens to exchange for it. They were then told that, so long as they attained/held onto 70 or more red tokens, they would gain the prize; otherwise, they would not gain the prize. By contrast, participants in the *prevention framing* condition ($n = 86$) were also reminded of the cost of the prize in tokens, and told that, while they had been given the prize for now, they could still *lose* it if they didn't have enough red tokens to exchange for it. They were then told that, so long as they attained/held onto 70 or more red tokens, they would not lose the prize; otherwise, they would lose the prize. These framing manipulations were reiterated by the computer just before the 12 anagram trials began. As in Study 1, all participants received false success feedback stating that they had succeeded at attaining/maintaining 100 red tokens and exchanged their tokens for the mug. They then completed the questionnaire packet containing the critical dependent measure ('If we gave you an opportunity to *buy* this prize, how much would you be willing to *pay* for it?'), as well as the measures of mood, beliefs about the desirability of the mug as a prize for success, and perceived efficiency of the means used to obtain the mug. Following this was a questionnaire designed to assess participants' reactions to the experimenter's handling of the session, the fairness of the procedures, and what they believed to be the purpose of the experiment. Once these questionnaires were completed, the participants were handed a debriefing form and asked if they had any questions. They were then compensated and thanked for their participation.

Results

We predicted that, holding constant any effects related to participants' own chronic focus, participants in the attainment condition would be willing to pay more to buy the mug when they were experimentally subject to promotion framing than when they were subject to prevention framing, whereas the opposite would be true of participants in the maintenance condition. To control for predominant focus by including it as a variable in our statistical analyses, we once again subtracted participants' ought self-guide accessibility score from their ideal self-guide accessibility score to produce an index of predominant self-guide strength. Participants whose difference scores were greater than zero were categorized as being predominantly promotion-focused; those whose difference scores were less than zero were categorized as being predominantly prevention-focused.⁷ Sixty-seven participants were subsequently classified as predominantly promotion-focused; the rest were classified as predominantly prevention-focused.⁸ A 2 (Predominant Focus: Promotion vs. Prevention) \times 2 (Framing: Promotion vs. Prevention) \times 2 (Condition of Goal Pursuit: Attainment vs. Maintenance)

⁷Once again, we utilized this procedure because of the high collinearity we observed between the ideal and ought self-guide accessibility indices (see Note 2).

⁸Of the 67 participants who were classified as predominantly promotion-focused, 14 were in the attainment/promotion framing condition, 17 were in the attainment/prevention framing condition, 21 were in the maintenance/promotion framing condition, and 15 were in the maintenance/prevention framing condition.

ANOVA was then run on the mug valuation item. This analysis revealed a significant main effect for the condition of goal pursuit manipulation, $F(1, 168) = 4.33, p < 0.05, \eta_p^2 = 0.03$, as well as a significant main effect for the predominant focus variable, $F(1, 168) = 6.54, p < 0.02, \eta_p^2 = 0.04$. The former effect was due to participants assigning a higher value to the mug when they were in the maintenance condition ($M = 4.13, SE = 0.29$) than when they were in the attainment condition ($M = 3.27, SE = 0.29$), while the latter effect was due to participants assigning a higher value to the mug when they were predominantly promotion-focused ($M = 4.23, SE = 0.33$) than when they were predominantly prevention-focused ($M = 3.17, SE = 0.25$).

Most important, however, was the finding of a significant regulatory focus framing \times condition of goal pursuit interaction, $F(1, 168) = 4.67, p < 0.05, \eta_p^2 = 0.03$. Figure 2 provides a graphical illustration of the effect. As expected, participants who were asked to attain tokens during the critical anagram task stated that they would be willing to pay more to buy the mug when they were subject to promotion framing ($M = 3.86, SE = 0.43$) than when they were subject to prevention framing ($M = 2.68, SE = 0.41$), planned contrast, $t(168) = 2.00, p < 0.05, \eta_p^2 = 0.02$. By contrast, participants who were asked to maintain tokens during the critical anagram task assigned a higher monetary value to the mug when they were subject to prevention framing ($M = 4.43, SE = 0.43$) than when they were subject to promotion framing ($M = 3.83, SE = 0.39$), though the difference proved nonsignificant, $t(168) = -1.05, p = \text{n.s.}, \eta_p^2 < 0.01$.⁹

The analysis also revealed an unexpected three-way predominant focus \times regulatory focus framing \times condition of goal pursuit interaction, $F(1, 168) = 4.29, p < 0.05, \eta_p^2 = 0.02$. Close inspection of the data revealed that this effect was due to the two-way regulatory focus framing \times condition of goal pursuit interaction being particularly strong when participants were predominantly promotion-focused, $F(1, 63) = 6.28, p < 0.02, \eta_p^2 = 0.09$, but being nonsignificant when participants were predominantly prevention-focused, $F(1, 105) < 1.0, p = \text{n.s.}, \eta_p^2 < 0.01$.

Finally, to determine whether the effects we obtained were independent of participants' efficiency judgments, their perceptions of the desirability of the prize, or their self-reported positive mood, we once again re-ran the earlier ANOVA, entering as additional, continuous predictors participants' judgments about the efficiency of attaining/maintaining tokens to win the prize, a single average index of the four items measuring participants' beliefs about the desirability of the mug as a prize ($\alpha = 0.91$), and a single average index composed of all positive and reverse-scored negative emotion ratings ($\alpha = 0.83$). Not surprisingly, exploratory analyses revealed significant correlations between all three of these measures and the amount participants stated they would be willing to pay to buy the mug, range of r 's 0.18 to 0.43, all p 's < 0.02 . Entering these three indices into the model caused the condition of goal pursuit main effect mentioned above to become non-significant, $F(1, 165) = 0.73$,

⁹As with Study 1, we had assigned sessions rather than individual participants to conditions so as to avoid the possibility that participants might overhear different instructions being delivered to other participants in the session. Although we once again felt it appropriate to treat the participants as independent, given that many sessions consisted of only one participant and that participants were run in soundproof booths, we did collect additional data in the Fall, 2004 subsample which allowed us to examine whether our predicted effect would still emerge when using sessions rather than participants as the units of analysis. Specifically, we used data matching participants to sessions to compute an average mug valuation index for each session, and coded each session as predominantly promotion-focused or predominantly prevention-focused based on an average within that session of the promotion-prevention difference scores. A 2 (Predominant Focus) \times 2 (Framing) \times 2 (Condition of Goal Pursuit) weighted least-squares ANOVA was then run on the average mug valuations from the fall subsample, using the number of participants in a session as a weighting vector so as to account for differences in reliabilities in the averages that might result from differences in session sizes. This analysis also produced the predicted regulatory focus frame \times condition of goal pursuit interaction, $F(1, 29) = 4.38, p < 0.05, \eta_p^2 = 0.13$. Inspection of the means revealed that, when sessions were assigned to the attainment condition, average mug valuations were higher in the promotion frame condition ($M = 4.06, SE = 0.60$) than in the prevention frame condition ($M = 2.66, SE = 0.59$), whereas when sessions were assigned to the maintenance condition, average mug valuations were higher in the prevention frame condition ($M = 5.17, SE = 0.69$) than in the promotion frame condition ($M = 3.95, SE = 0.62$). This finding cannot be explained by any confounds or independence violations that might have arisen from the decision to assign sessions rather than individual participants to conditions.

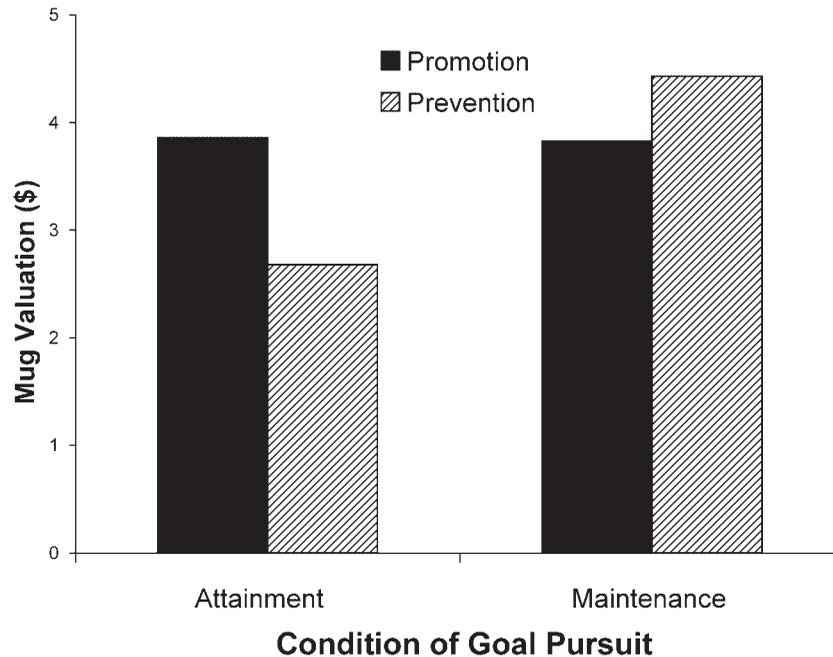


Figure 2. Effects of framing and condition of goal pursuit on mug valuations

$p = 0.40$, $\eta_p^2 = 0.004$. However, the other three effects mentioned earlier—most importantly, the critical two-way framing \times condition of goal pursuit interaction—remained significant, all F 's (1, 165) > 4.95 , all p 's < 0.03 , all η_p^2 's = 0.03; for the framing \times condition of goal pursuit interaction specifically, $F(1, 165) = 5.29$, $p < 0.03$, $\eta_p^2 = 0.03$, with the amount of variance in mug valuations accounted for by the framing \times condition of goal pursuit interaction showing no drop (and, therefore, no indication of mediation by the efficiency, mood, and prize desirability indices) whatsoever. The pattern of means, adjusted for the additional predictors, also remained the same as before.¹⁰

¹⁰As with Study 1, it might be asked whether changes in our predicted effects would have emerged had the ANOVA's been run with the emotion items kept segregated into their respective emotion categories. It might also be asked whether a different result would have emerged had only the positive emotion items been entered, given the positive valence of the outcome experienced by all participants. To address these issues, we once again computed separate indices for the four types of emotions (α 's = 0.70, 0.69, 0.74, and 0.81 for the elation, quiescence, dejection, and agitation emotion indices, respectively) and used all four of them in place of the single mood index. Each of these indices had only a modest correlation with the mug valuation measure, though two of the correlations (i.e., the ones for elation and for dejection) did prove significant at the 0.05 level, for elation and quiescence, r 's = 0.19 and 0.07, respectively; for dejection and agitation, r 's = -0.17 and -0.12, respectively. We then re-ran the ANOVA twice, once with all four indices, along with the efficiency and prize desirability indices, entered into the model as additional predictors, a second time with all but the negative emotion indices entered as predictors. With all possible predictors included, the predominant focus main effect, the critical regulatory focus framing \times condition of goal pursuit interaction, and the three-way predominant focus \times regulatory focus framing \times condition of goal pursuit interaction all remained significant, all F 's (1, 162) > 4.86 , all p 's < 0.03 , all η_p^2 's = 0.03; for the regulatory focus framing \times condition of goal pursuit interaction in particular, $F(1, 162) = 5.20$, $p < 0.03$, $\eta_p^2 = 0.03$, with the amount of variance in mug valuations accounted for by the framing \times condition of goal pursuit interaction showing no drop (and, therefore, no indication of mediation by the efficiency, mood, and prize desirability indices) whatsoever. Similar results emerged when all but the negative emotion indices were included, for the predominant focus main effect and the three-way predominant focus \times regulatory focus framing \times condition of goal pursuit interaction, all F 's (1, 164) > 4.85 , all p 's < 0.03 , all η_p^2 's = 0.03; for the critical regulatory focus framing \times condition of goal pursuit interaction, $F(1, 164) = 5.42$, $p < 0.03$, $\eta_p^2 = 0.03$. Finally, in both cases, the pattern of adjusted means was observed to be the same as the pattern of means from the original ANOVA model.

GENERAL DISCUSSION

Past research on self-regulation has often conceived of goal pursuit in terms of the condition of attaining desired end-states. Little attention has been paid, however, to whether what happens in the condition of goal attainment is the same as what happens in the condition of goal maintenance (i.e., when a desired end-state has already been attained). Our analysis suggested that there exists a critical difference between these two goal pursuit conditions in terms of the strategies for which they call. Specifically, we reasoned that an attainment task, with its emphasis on bringing about additions, tends to call for the use of eager approach strategies during goal pursuit, whereas a maintenance task, with its emphasis on stopping subtractions, tends to call for the use of vigilant avoidance strategies during goal pursuit.

Past research has demonstrated that people value outcomes more when the strategic means they employ to bring about those outcomes suit the strategic preferences of their regulatory orientation (Higgins, 2000). Work on regulatory focus theory (Higgins, 1997, 1998) has shown that there exist two distinct motivational orientations which differ not only in terms of the needs they serve, but also in terms of the self-regulatory strategies that are preferred—a *promotion focus* involving a preference for eager approach strategies, and a *prevention focus* involving a preference for vigilant avoidance strategies. These insights were employed in the present study to test our proposal about the strategic differences between attainment and maintenance. Specifically, we hypothesized that the outcomes produced by successful self-regulation on an attainment task would be valued more by people in a promotion focus than by people in a prevention focus, whereas the opposite would be true of outcomes produced by successful self-regulation on a maintenance task. This prediction was guided by the expectation that people with promotion focus concerns would experience more regulatory fit when engaging in an attainment task (calling for eager approach strategies) than when engaging in a maintenance task (calling for vigilant avoidance strategies), whereas the opposite would be true for people with prevention focus concerns.

The two experiments reported in this article supported our proposal. In Study 1, participants whose pursuit of a mug involved the attainment of tokens said they would be willing to pay more to buy the mug when they were predominantly promotion-focused than when they were predominantly prevention-focused, whereas the opposite was true of participants whose pursuit of that same mug involved the maintenance of tokens already attained. In Study 2, we replicated this finding with an experimental manipulation of promotion and prevention operationalized in terms of outcome framing (i.e., representing success and failure at goal pursuit in terms of either gains and nongains for promotion, or nonlosses and losses for prevention). Reflecting a genuine fit effect like that found in previous regulatory fit studies, these effects emerged even when controlling statistically for beliefs about the desirability of the mug as a prize for success and for participants' self-reported positive mood (Studies 1 and 2), as well as when controlling for the perceived efficiency of attainment versus maintenance as means for obtaining the mug as a prize (Study 2). Taken together, the results provide strong support for our contention that the conditions of attainment and maintenance differ in terms of the strategies for which they call—attainment calling for the use of eager approach strategies, and maintenance calling for the use of vigilant avoidance strategies.

Two features of the present experiments are worthy of discussion here. The first concerns the failure in Study 2 to obtain a significant effect of regulatory focus framing in the maintenance condition, as well as the finding in Study 2 that the critical regulatory focus framing \times condition of goal pursuit interaction was reliable only among people who were predominantly promotion-focused. We do not have an explanation for either finding, though we note that the effect observed in the maintenance condition was in the predicted direction in both studies (with the effect being

statistically reliable in Study 1), and that, in the discussion section for Study 1, we explicitly entertained the possibility that the joint effects of chronic and situationally induced regulatory foci would not be additive (i.e., because one might simply overwhelm the other). If the effect of any one source of regulatory focus is dependent upon its ability to overwhelm (and, therefore, eliminate the effect of) any other source of focus, and if, in a particular experimental context, situationally induced focus is able to overwhelm a chronic promotion focus but not a chronic prevention focus, then the three-way interaction observed in Study 2 would likely be found. Our knowledge of how chronic and temporary sources of regulatory focus operate together is currently underdeveloped, and, thus, we see this as an area that could benefit from further empirical investigation. This issue does not detract, however, from the critical finding that regulatory focus concerns did interact with attainment and maintenance goal pursuit conditions in a manner consistent with our expectations about the strategic pull of attainment and maintenance tasks.

The other issue concerns the nature of the manipulation used in Study 2 to induce people into a promotion or prevention focus. Given that gain–nongain framing could be considered similar to attainment, and that nonloss–loss framing could be considered similar to maintenance, might this manipulation not have been more of an attainment versus maintenance manipulation than a manipulation of regulatory focus? Generally speaking, there are cases where the outcome framing method can be interpreted as an attainment–maintenance manipulation, as we suggest below. However, there were additional features of our outcome framing manipulation in Study 2 that went beyond the simple use of gain–nongain versus nonloss–loss framing, and that, therefore, make this interpretation less applicable in the present context. As described earlier, participants in the ‘promotion framing’ condition were sensitized to the potential presence of positive outcomes by being told that they would get the mug ‘*so long as they did well*’, whereas participants in the ‘prevention framing’ condition were sensitized to the potential presence of positive outcomes by being told that they would experience those outcomes ‘*so long as they did what was necessary*’. These additional instructions in our version of the outcome framing manipulation clearly targeted participants’ broader regulatory focus concerns (as intended), and, thus, their inclusion indicates that our manipulation constituted more than just another manipulation of attainment versus maintenance.

In light of the present findings and arguments, it is interesting to reconsider some other findings from earlier studies that have used the outcome framing method—for instance, those reported by Shah, et al. (1998). In their studies, regulatory focus was manipulated by framing the task as either a psychological situation involving gains or as a psychological situation involving nonlosses. The promotion ‘gain’ situation was induced by telling participants that they had already received \$4 for participating but could gain another dollar by reaching a performance criterion of solutions on an anagram task. The prevention ‘nonloss’ situation, by contrast, was induced by telling participants that they had already received \$5 for participating but that they would need to reach the same performance criterion on the anagram task as in the promotion ‘gain’ condition in order to keep from losing \$1 and ending up with only \$4. These studies found that performance was better when participants who were chronically strong on promotion received ‘gain’ rather than ‘nonloss’ framing, and that the opposite was true for participants who were chronically strong on prevention.

From the new perspective of the present paper, it is possible to reinterpret these results as a regulatory fit effect on performance, where the psychological situation involving gains constituted an attainment goal pursuit condition and the psychological situation involving nonlosses constituted a maintenance goal pursuit condition. Given the current findings, it would be expected that the combination of chronic promotion and attainment, and the combination of chronic prevention and maintenance, would produce a motivational state-sustaining regulatory fit effect that would, in turn,

enhance performance (i.e., relative to the poor fit produced by the combination of chronic promotion and maintenance, or the combination of chronic prevention and attainment).¹¹

This reinterpretation suggests an interesting set of applications of the attainment–maintenance distinction to a broad set of social psychological phenomena in which the mechanism of the effect of goal pursuit condition is likely to be by way of regulatory fit. As a way of illustrating, consider the example that was mentioned in the introduction of taking a final exam in a course. For those doing well in the course, the final exam could be represented in terms of a desired end-state of attaining an ‘A’ for that exam alone, or it could be represented in terms of maintaining an overall ‘A’ for the course. The findings from the present research suggest that, when students who are doing well in the course must prepare for and take the final exam, those who are predominantly promotion-focused should perform better by thinking about the grade they want to *attain* on this particular exam, whereas those who are predominantly prevention-focused should perform better by thinking about the overall grade they want to *maintain* by doing well on the exam, since these are the combinations of regulatory orientations and goal pursuit conditions that will produce the greatest amount of regulatory fit.

Consider, also, the conditions under which people may or may not be willing to change their beliefs. As is well known, people’s reasoning about their social worlds often reveals a tendency towards a number of belief-preserving biases, such as the tendency to attribute stereotype-inconsistent behaviors to external or transient, internal causes (Deaux & Emswiller, 1974; Feather & Simon, 1975; Jackson, Sullivan, & Hodge, 1993; Taynor & Deaux, 1973; Yarkin, Town, & Wallston, 1982), to segregate social category deviants into category-preserving subtypes (Hewstone, Macrae, Griffiths, & Milne, 1994; Johnston & Hewstone, 1992; Johnston, Hewstone, Pendry, & Frankish, 1994; Kunda & Oleson, 1995; Maurer, Park, & Rothbart, 1995; Weber & Crocker, 1983; Yzerbyt, Coull, & Rocher, 1999), and to subject belief-disconfirming evidence to particularly intense scrutiny (Wyer & Frey, 1983; see also Ditto & Lopez, 1992; Kunda, 1987; Liberman & Chaiken, 1992; Lord, Lepper, & Preston, 1984; Lord, Ross, & Lepper, 1979; Pyszczynski, Greenberg, & Holt, 1985).

Our research suggests that maintenance tasks pull for the use of vigilant avoidance means during self-regulation, and that those tasks produce greater regulatory fit for those whose regulatory orientation predisposes them to prefer vigilant avoidance means than for those whose orientation predisposes them to prefer eager approach means. Thus, to the extent that the processes underlying phenomena such as belief perseverance are underwritten by the motivation to maintain a desired end-state (and are, therefore, expressions of vigilant avoidance of change), we would expect individuals who are inclined to use vigilant avoidance strategies, such as individuals in a prevention focus, to experience greater regulatory fit while engaging in those processes (and to, therefore, be more inclined to engage in those processes) than individuals inclined to use eager approach strategies, such as individuals in a promotion focus. As a consequence, we would expect individuals in a prevention focus, compared to those in a promotion focus, to be more likely to attribute expectancy-incongruent behavior to situational factors, to subtype social category deviants, to debase the value of belief-disconfirming evidence, and so on. Moreover, we would expect these effects to emerge *irrespective* of whether an individual’s regulatory focus concerns are due to dispositional factors (e.g., chronic differences between ideal and ought self-guide accessibility) or to situations which pull primarily for a promotion or prevention focus. Further research will need to be conducted to determine the extent to which these conjectures hold, and to examine the applicability of the insights of our research to other maintenance-like domains.

¹¹Because the anagrams in the present studies were selected to permit false success feedback to be convincingly delivered, performance on them would not have been appropriate for testing the performance hypotheses examined by Shah et al. (1998). Thus, our studies are limited to examining outcome valuation as the critical dependent measure.

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