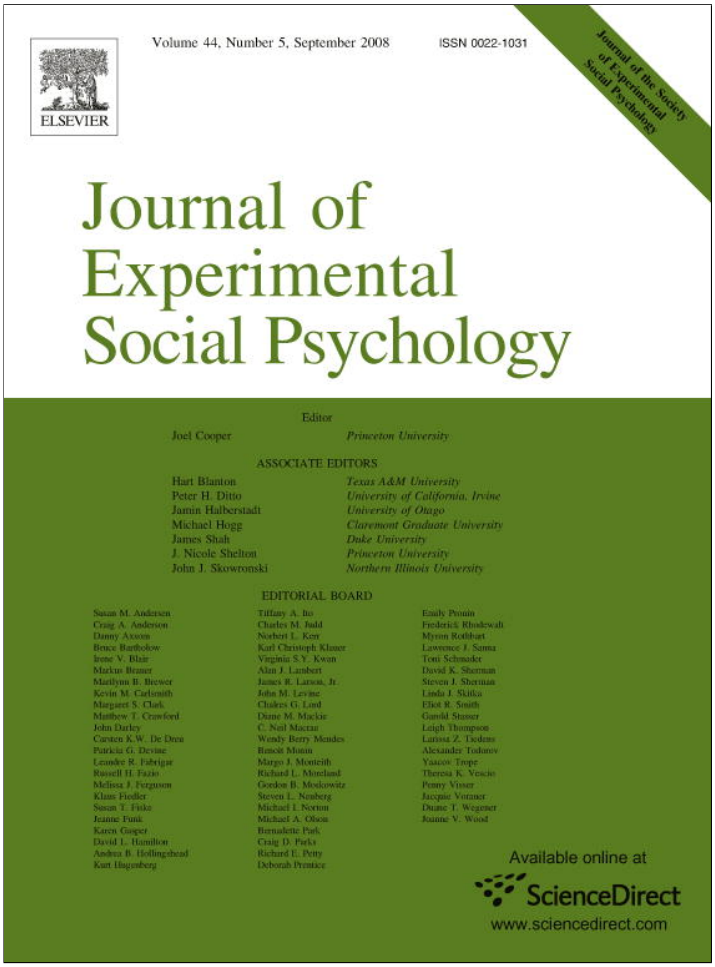

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# How preferences for eager versus vigilant judgment strategies affect self-serving conclusions ☆

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ABSTRACT

People are often motivated to reach self-serving conclusions during judgment. This article examines how such self-serving judgment *outcomes* are influenced by preferences for different judgment *strategies*. Two studies tested how preferences for *eager* (promotion-oriented) versus *vigilant* (prevention-oriented) judgment strategies affected self-serving explanations for success or failure. Regardless of their performance, those preferring vigilant strategies selectively endorsed a few explanations above others, whereas those preferring eager strategies more evenly endorsed multiple explanations. Furthermore, although the explanations selected by those preferring vigilant strategies were indeed self-serving (emphasizing personal responsibility for success and external circumstances for failure), the more balanced endorsement of multiple explanations by those preferring eager strategies was associated with attenuated self-serving tendencies. Finally, those preferring eager strategies were also less self-serving in their generalization from explanations of current performance to predictions of future performance. The larger implications of these findings for the role of strategic preferences in judgment are discussed.



At some point, most of us have engaged in "wishful thinking". Motivated by some particularly desired conclusion, we have selectively appraised our abilities or circumstances to ensure we reach this conclusion. Whereas much research has explored the mechanisms of wishful thinking and provided insight into how motivation affects judgment (see Dunning, 2003; Kruglanski, 1996; Kunda, 1990; Molden & Higgins, 2005), this article extends past work by investigating how people's explanations of their own behavior are jointly influenced by two separate types of motivation: (a) preferences for selecting those explanations that provide the most self-serving outcomes; and (b) preferences for performing the selection process using eager (i.e., focused on gains) versus vigilant (i.e., focused on non-losses) strategies.

## Motivations for self-serving judgment outcomes

Research on motivated judgment has examined many needs and desires (Kruglanski, 1996; Molden & Higgins, 2005), but the most thoroughly studied have been people's broad preferences for viewing themselves in the most flattering light possible (Dunning, 2003; Pyszczynski & Greenberg, 1987; Tesser, 2000). These preferences for *self-serving* outcomes during judgment have a wide variety of effects. For example, they can lead people to: (a) activate and endorse information suggesting they are skilled and successful (Gollwitzer, Earle, & Stephan, 1982; Sinclair & Kunda, 1999); (b) scrutinize (and criticize) information that has negative implications for their self-views (Ditto, Scepansky, Munro, Apanovitch, & Lockhart, 1998; Liberman & Chaiken, 1992); and (c) generalize from their own qualities when deciding what attributes and standards typically define success (Beauregard & Dunning, 1998; Dunning, Leuenberger, & Sherman, 1995).

Although preferences for self-serving outcomes greatly influence judgment processes, such preferences rarely exist in isolation (Kruglanski et al., 2002). That is, judgments are often guided by many different types of motivations (e.g., desires for self-clarity, self-consistency, or accuracy; see Baumeister, 1998). Fewer studies, however, have explored the joint effect of separate motivations on judgment (but see Fishbach & Ferguson, 2007). In the present research, we examine the effects of preferences for

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self-serving outcomes on explanations for one's performance when this explanation process is also affected by an additional preference for using specific types of judgment strategies.

## Motivations for eager versus vigilant judgment strategies

Beyond motivations to reach particular conclusions during judgment—self-serving or otherwise—people also possess motivations for the manner in which they form these conclusions (Higgins & Molden, 2003; Molden & Higgins, 2005). That is, independent of whatever judgment outcome they value, people prefer to pursue this outcome using strategies that "fit" their current motivational orientation (see Higgins, Idson, Freitas, Spiegel, & Molden, 2003).

Two such preferred strategies that have been distinguished in previous research (Crowe & Higgins, 1997; Friedman & Förster, 2001; Liberman, Molden, Idson, & Higgins, 2001; Molden & Higgins, 2004) are *eager* and *vigilant* strategies. Eager strategies arise from *promotion* motivations for advancement and the fulfillment of hopes and aspirations. Promotion motivations create a focus on achieving positive outcomes (i.e., gains) and ensuring against missed opportunities for such outcomes (i.e., non-gains). The strategies that best fit these motivations thus involve pursuing gains even at the risk of committing errors and accepting losses (Higgins, 1997; Molden, Lee, & Higgins, 2008). That is, when promotion-focused, people prefer to take chances and to be overly inclusive when evaluating their options so as not to overlook anything that could allow advancement. This approach prioritizes ensuring against *errors of omission*, which specifically represent missed opportunities for gains (cf. Tanner & Swets, 1954) and are thus particularly distressing for those with strong promotion concerns (see Camacho, Higgins, & Lugar, 2003; Roese, Hur, & Pennington, 1999). The tradeoff of such an approach is that taking chances and worrying about omission increases the risk that one will make choices that, despite the initial potential they appear to possess, end up leading one to actively commit mistakes.

In contrast, vigilant strategies arise from *prevention* motivations for security and the fulfillment of duties and obligations. Prevention motivations create a focus on achieving protection from negative outcomes (i.e., non-losses) and ensuring against the occurrence of such outcomes (i.e., losses). The strategies that best fit these motivations thus involve securing against losses even at the risk of missing opportunities and forgoing possible gains (Higgins, 1997; Molden et al., 2008). That is, when prevention-focused, people prefer to play it safe and to be overly exclusive when evaluating their options so as not to commit to something that compromises their security. This approach prioritizes ensuring against *errors of commission*, which specifically represent realized losses (cf. Tanner & Swets, 1954) and are thus particularly distressing for those with strong prevention concerns (see Camacho et al., 2003; Roese et al., 1999). The tradeoff of such an approach is that proceeding cautiously and worrying about committing errors leaves one open to missing out on choices that, despite some initial uncertainty that existed, would have been beneficial.

Thus, in sum, motivations for promotion or prevention create clear priorities concerning the types of errors that people perceive to be most serious and most strenuously avoided. The eager strategies associated with promotion motivations involve a special concern with gains, and thus a greater focus on avoiding missed opportunities for gains than on actually realized losses. In contrast, the vigilant strategies associated with prevention motivations involve a special concern with losses and a greater focus on avoiding realized losses than on avoiding missed opportunities for gains.

These priorities created by eager or vigilant strategic preferences can have important influences on judgment and decision making (see Molden et al., 2008). When encountering information of varying and uncertain importance, preferences for eager strategies should lead people to remain open to alternatives, set lower thresholds of acceptance for any information that is potentially relevant, and refrain from strongly endorsing any one hypothesis over another. This approach takes a chance at identifying all of the relevant hypotheses and of not omitting any important pieces of information (i.e., not missing a chance to gain a greater understanding of the situation). In the same circumstances, however, preferences for vigilant strategies should lead people to narrowly focus on only what seems certain, set higher thresholds of acceptance that include only the most relevant information, and endorse a few select hypotheses above the rest. This approach plays it safe by concentrating on preventing commitment to incorrect hypotheses (i.e., not considering anything that might bring about false understanding of the situation).

Evidence that individuals with either chronically active or temporarily induced motivations for promotion or prevention do indeed favor these particular strategies has been found across a variety of judgment tasks (see Molden et al., 2008). For example, Crowe and Higgins (1997) confirmed that, during a recognition memory task, promotion motivations created biases toward inclusion and a focus on reducing errors of omission at the cost of increased errors of commission. In contrast, prevention motivations created biases toward exclusion and a focus on reducing errors of commission at the cost of increased errors of omission (see also Friedman & Förster, 2001). Crowe and Higgins also generalized these findings to other types of judgment tasks and demonstrated that promotion motivations led people to more openly consider a wider variety of relevant categories when asked to sort a group of objects, whereas prevention motivations led people to more narrowly consider only a few central categories. In a separate series of studies, Molden and Higgins (2004) found the same pattern of results when people were assigning individuals to particular trait categories based on observations of behavior. Finally, Liberman et al. (2001) showed that promotion motivations produced a more open endorsement of multiple explanations for someone else's helpful behavior whereas prevention motivations produced a more narrow selection of one central explanation.[1]

## Pursuing self-serving outcomes with eager versus vigilant strategies

Given the separate effects of preferences for self-serving outcomes and preferences for eager versus vigilant strategies, the joint effects of these preferences could also have important implications for judgment. Vigilant strategic preferences generally lead people to narrow in on a few more-certain hypotheses. When this narrowing process is accompanied by self-serving outcome preferences, the alternative hypotheses that are left should be particularly likely to be those that are the most self-flattering (cf. Pyszczynski & Greenberg, 1987). In contrast, eager strategic preferences generally lead people to be open to entertaining even less-certain hypothe-

[1] Special circumstances do exist in which narrowly focusing on what is most certain is not the more cautious tactic. When faced with strong evidence for each of two conflicting and mutually exclusive alternatives, where endorsing one necessitates rejecting something that appears to have strong support, the more cautious tactic instead involves remaining open to both conflicting possibilities so as not to risk the serious mistake of committing to a single alternative that is incorrect (see Molden & Higgins, 2004). In contrast to this special case, the present studies examined people's explanations for their performance on a novel reasoning task that they had never previously encountered. Thus, in forming their explanations, individuals were faced with a variety of uncertain possibilities (e.g., Are my abilities for this type of reasoning particularly strong or deficient? Was the set of problems I received particularly easy or difficult? Was I particularly lucky or unlucky?) none of which were mutually exclusive and any or all of which could have been true to some degree. In these circumstances, which is typical of research on people's explanations for their performance, the prediction is that prevention-focused individuals will display a more narrow focus in their judgments.

ses. When this openness is combined with self-serving outcome preferences, it may therefore attenuate people's typical tendencies to select only self-flattering alternatives and diminish the overall bias in the hypotheses that are considered.

This possibility was tested in two studies. Success or failure on an intellectual task was manipulated and explanations for performance were assessed. Much previous research has shown that the self-serving preferences evoked in these circumstances lead people to explain success by accepting personal responsibility but to explain failure by blaming external circumstances (see Campbell & Sedikides, 1999; Zuckerman, 1979). Eager versus vigilant strategic preferences were either manipulated (Study 1) by temporarily inducing promotion versus prevention motivations, or measured (Study 2) by assessing chronic individual differences in such motivations. We predicted in both studies that: (a) prevention-focused individuals would narrowly select a few favored explanations over others, whereas promotion-focused individuals would more openly and evenly endorse a range of explanations; and (b) the explanations favored by prevention-focused individuals would be more self-serving, whereas the explanations favored by promotion-focused individuals would be less self-serving.

In addition to believing that their current skills and efforts are more responsible for bringing about success than failure, another way in which people may engage in self-serving judgments is by making stronger generalizations when considering how these skills and efforts predict future success as opposed to when considering how they predict future failure (cf. Beauregard & Dunning, 1998; Dunning & Beauregard, 2000; Dunning et al., 1995). Thus, in Study 2, we further examined whether, when asked to predict their performance on future intellectual tasks, the more narrow selection of explanations by prevention-focused individuals would also be associated with more self-serving generalization from explanations of current performance to predictions of future performance, whereas the more open selection of explanations by promotion-focused individuals would be associated with less self-serving generalizations (cf. Liberman et al., 2001).

## Study 1

### Method

#### Participants

Participants were 100 Columbia University students (54 men and 46 women) who received $5 for volunteering.

#### Procedure

Participants first completed what they believed was a newly developed measure of "conceptual reasoning", which they had never before seen. They then worked on "unrelated" materials while the experimenter scored the reasoning task. These materials were designed to induce promotion or prevention motivations. Finally, participants received feedback on their reasoning performance and, ostensibly to help the experimenters understand people's experiences with the task, rated several explanations for their performance.

#### Manipulating success and failure

The conceptual reasoning measure actually consisted of 15 problems from the remote associates test (RAT; Mednick, 1962). Those in the *success* condition received an easy set of problems whereas those in the *failure* condition received a difficult set of problems (see Kihlstrom, 1996). Furthermore, regardless of their actual scores, those in the success condition received feedback that they performed better than average, whereas those in the failure condition received feedback that they performed worse than average. Thus, as in much previous work exploring self-serving judgments (e.g., Beauregard & Dunning, 1998; Dunning et al., 1995; Heatherton & Vohs, 2000; see McFarlin & Blascovich, 1984), feedback and task difficulty were purposely confounded to create unambiguous and veridical experiences of success or failure that did not depend on deceiving participants about the quality of their performance.

#### Inducing promotion or prevention motivations

Past studies have shown that eliciting people's hopes and aspirations creates a focus on advancement and gains that temporarily induces promotion motivations for subsequent tasks (Higgins, 1997). Accordingly, participants in the *promotion prime* condition described their aspirations both now and in the past. In contrast, eliciting people's duties and obligations creates a focus on maintaining security and avoiding losses that temporarily induces prevention motivations for subsequent tasks (Higgins, 1997). Accordingly, participants in the *prevention prime* condition described their obligations both now and in the past. Identical manipulations have been used successfully in many previous studies (e.g., Higgins, Shah, & Friedman, 1997; Liberman et al., 2001; Molden & Higgins, 2004).

#### Measuring explanations for performance

Following the motivational induction and the success or failure feedback, participants rated on 1 (*none*) to 9 (*very much*) scales the extent to which six possible causes had influenced their performance: their reasoning ability, the effort they had put into solving the problems, the difficulty of the problems, their opportunity to practice the reasoning task, their current mood, and luck.[2]

### Results and discussion

#### Manipulation check

Participants in the success condition scored much higher ($M = 11.3$) on the RAT problems than those in the failure condition ($M = 2.9$, $F(1,89) = 471$, $p < .001$). The prime condition had no simple or higher-order associations with RAT scores ($F$'s < 0.22). In order to ensure that participants were indeed generally uncertain about the causes for their performance, as was assumed in the motivational hypotheses we outlined above, we initially examined the overall frequency with which participants rated each of the six types of explanation as the one that contributed most to their performance. No single explanation was chosen by more than 30% of the participants. Furthermore, these results were the same whether the success or failure conditions were considered separately or pooled together. Thus, overall, it appears that the circumstances in which participants made their judgments were largely uncertain and that no one explanation was clearly preferred by a majority of people.

#### Narrow or open selection of explanations

For each participant, the following were calculated across all six of their explanation ratings: (a) the average absolute deviation from the scale midpoint; (b) the range between the highest and lowest rating; and (c) the standard deviation. The absolute devia-

[2] In both Studies 1 and 2, several other motivations that could affect explanations of one's own behavior were assessed, including needs for cognition, needs for closure, and implicit theories of intelligence (Cacioppo, Petty, Feinstein, & Jarvis, 1996; Kruglanski & Webster, 1996; Molden & Dweck, 2006). None of these additional measures were significantly correlated with participants' promotion or prevention motivations. Furthermore, including these measures as covariates did not alter the significance of any of the analyses reported in either study. Independent effects of these additional variables were occasionally found, but were not consistent across dependent measures and never replicated across both studies. Therefore, we do not discuss these results in detail.

tion measures the rating *extremity* produced by clearly designating some explanations as "good" and others as "bad" on the rating scale (see Campbell, 1990). The range and standard deviation measure the rating *spread* produced by clearly elevating some alternative explanations over others, regardless of where these ratings fall along the rating scale. All three indices were highly correlated ($r$'s = .79–.92, $p$'s < .0001). In line with the first prediction outlined above, those in the prevention prime condition were expected to score higher on all of these measures than those in the promotion prime condition.

The results displayed in Table 1 support these expectations. Separate 2 (performance: success vs. failure) × 2 (prime: promotion vs. prevention) ANOVAs on each measure revealed only main effects of the prime condition (all other $F$'s < 1). A within-study meta-analysis (see Hayes, 1998), in which the effects of participants' motivational focus were pooled across all three of the extremity and spread measures using Strube's (1985) method for correlated dependent variables, revealed a significant overall effect ($Z = 2.02$, $p < .05$). Identical analyses of the average magnitude of participants' ratings across all six explanations did not reveal any effect of the prime condition, indicating that participants' promotion or prevention focus did *not* influence how generally plausible participants found the set of explanations presented.

*Favoring more or less self-serving explanations*

Given that participants in the prevention prime condition did more strongly favor some explanations over others, additional analyses examined whether these favored explanations were indeed more self-serving. Determining how self-serving participants' explanation ratings were requires assessing what types of alternatives they elevated over the others. That is, in measuring whether they are primarily claiming personal responsibility for success and blaming external circumstances for failure, participants' absolute ratings of each explanation are only informative in comparison to their ratings of all of the other alternatives.

Two separate comparative indices were therefore created. Tallies were taken of both the single explanation participants rated as contributing most to their performance (i.e., their *most favored* explanation) and of what types of explanations they indicated as very much contributing (i.e., rated 7 or higher on the 9-point scale) to their performance (i.e., *highly-contributing* explanations). These tallies were then combined into larger categories so that our analyses would not be compromised by the low frequency with which certain explanations (e.g., mood and luck) were endorsed.

As noted earlier, much previous research on self-serving attributions for performance (see Campbell & Sedikides, 1999; Weiner, 1985; Zuckerman, 1979) has shown that people prefer to explain success in ways that allow them to claim *personal* responsibility for their performance (i.e., in terms of their internal abilities or efforts) so as to enhance the pride they feel they can take in success. In contrast, people prefer to explain failure in ways that allow them to blame *circumstantial* factors outside of their control (i.e., in terms of the external features of the particular task they were given or of the context in which they completed it) so as to reduce the responsibility they must accept. Therefore, to be consistent with this past research, higher comparative ratings of ability or effort explanations were thus categorized as claiming personal responsibility for the outcome. This categorization was further justified by the positive correlations between ability and effort ratings ($r = .19$, $p = .05$). Higher comparative ratings of task difficulty, opportunities for practice, luck, or mood were categorized as claiming that circumstantial factors determined the outcome. Categorizing practice explanations with other circumstantial explanations was justified by the fact that participants completed a reasoning task they had never before encountered and their opportunities for practice (or the lack thereof) was entirely in the hands of the experimenter. Therefore, practice was an environmental factor outside of participants' control (see Heider, 1958). This categorization was further justified by the positive correlations between practice ratings and other ratings of circumstantial causes ($r$'s = .07–.27, $p$'s < .05 for all correlations except for with luck).

In line with the second prediction outlined above, those in the prevention prime condition were expected to be markedly self-serving in their explanations (i.e., to accept personal responsibility following success, but blame circumstantial factors following failure), whereas those in the promotion prime condition were expected to be less self-serving. The results displayed in Tables 2 and 3 support this hypothesis. Table 2 reveals that participants in the prevention prime condition showed a clear self-serving pattern in their most favored explanations for success versus failure ($\chi^2(2, N = 50) = 18.0$, $p < .001$). In contrast, those in the promotion prime condition showed only a weak self-serving pattern in their most favored explanations ($\chi^2(2, N = 50) = 5.4$, $p = .07$). A significant prime × performance × explanation-choice interaction ($\chi^2(2, N = 100) = 8.4$, $p = .02$) confirmed that these self-serving effects were significantly greater in the prevention prime condition.

Follow-up analyses in which participants who equally favored personal and circumstantial explanations were excluded did not alter the significance of any of the simple or higher-order effects reported, except that in the promotion prime condition the pattern of self-serving responses following success or failure dropped to non-significance ($\chi^2(1, N = 37) = 1.8$ $p = .18$), as hypothesized. Furthermore, although they are somewhat compromised by low cell-counts, as noted above, additional multinomial logistic analyses conducted without collapsing participants' favored explanations into larger personal or circumstantial categories also suggest similar conclusions. In the prevention prime condition, experiences of success or failure had a significant omnibus effect on the explanations participants selected ($\chi^2(1, N = 100) = 6.86$, $p = .01$). Individuals in this condition were more likely to select ability and effort explanations following success, but more likely to select task difficulty, practice, and mood explanations following failure. However, in the promotion prime condition, experiences of success or failure did not have a significant omnibus effect on the explanations participants selected ($\chi^2(1, N = 100) = 0.52$, $p = .47$).

**Table 1**
Effects of induced promotion or prevention motivations on the extremity and spread of participants' ratings of explanations for their performance

| Measure | Promotion *M* | Prevention *M* | $F(1,96)$ |
|---|---|---|---|
| Extremity | 2.0 | 2.3 | 2.7$^{\dagger}$ |
| *SD* | 2.2 | 2.5 | 3.5$^{*}$ |
| Range | 5.4 | 6.2 | 5.4$^{**}$ |

*Note.* $^{\dagger}p < .11$; $^{*}p < .07$; $^{**}p < .05$.

**Table 2**
Percentage of participants with induced promotion or prevention motivations who rated personal, circumstantial, or both explanations as having the greatest contribution to their performance following success or failure

| Condition | Type of explanation: Personal (%) | Circumstantial (%) | Both (%) | $\chi^2(2, N = 25)$ |
|---|---|---|---|---|
| *Prevention* | | | | |
| Success | 54 | 19 | 27 | 5.2$^{\dagger}$ |
| Failure | 13 | 79 | 8 | 22.8$^{****}$ |
| *Promotion* | | | | |
| Success | 44 | 40 | 16 | 3.4 |
| Failure | 16 | 48 | 36 | 4.0 |

*Note.* $^{\dagger}p < .10$; $^{****}p < .001$.

**Table 3**
Effects of induced promotion or prevention motivations on the number of personal or circumstantial explanations selected as "very much contributing" to performance following success or failure

| | Prevention | | | Promotion | | |
|---|---|---|---|---|---|---|
| | Success | Failure | | Success | Failure | |
| Measure | *M* | *M* | *F*(1,96) | *M* | *M* | *F*(1,96) |
| Personal selections | 1.02 | 0.87 | 0.45 | 1.12 | 0.75 | 3.1$^{\dagger}$ |
| Circumstantial selections | 0.72 | 1.91 | 28.5$^{****}$ | 0.91 | 1.22 | 1.8 |

*Note.* $^{\dagger}p < .10$; $^{****}p < .001$.
Selection of personal or circumstantial explanations as very much contributing to performance was defined as rating these types of explanations 7 or higher on a 9-point scale.

The results for the highly-contributing explanations measure were weaker, but similar. Table 3 reveals that, although planned-contrasts showed no significant effects of performance on the number of personal explanations selected as highly contributing in either the prevention prime or promotion prime conditions, those in the prevention prime condition did show a significant self-serving pattern in the number of circumstantial explanations selected, whereas those in the promotion prime condition did not. A 2 (prime: promotion vs. prevention) × 2 (performance: success vs. failure) × 2 (explanation: personal vs. circumstantial) mixed ANOVA further supported these conclusions. A marginally significant three-way interaction ($F(1,93) = 2.82$, $p = .10$) was found, such that the performance × explanation effect confirmed a significant overall self-serving pattern for those in the prevention prime condition ($F(1,48) = 16.3$, $p < .001$), but not for those in the promotion prime condition ($F(1,48) = 2.60$, $p = .11$).

Overall, Study 1 largely confirmed our hypotheses. Regardless of their perceived success or failure, prevention-focused individuals elevated a select few explanations for performance above others, as is consistent with vigilant judgment strategies, whereas promotion-focused individuals more evenly endorsed multiple explanations, as is consistent with eager judgment strategies. Moreover, the few explanations favored above the others by prevention-focused individuals were indeed those strongly associated with self-serving conclusions, whereas the more open selection of explanations by promotion-focused individuals overall was associated with weaker self-serving conclusions.

To replicate and extend these findings, Study 2 introduced two modifications to the procedures of Study 1. First, promotion and prevention motivations were measured rather than temporarily induced. Second, after explaining their current performance, participants then predicted their future performance as well.

## Study 2

### *Method*

#### *Participants*

Participants were 97 Columbia University students (53 men and 44 women) who received $5 for volunteering.

#### *Procedure*

Participants first completed a measure of their chronic promotion versus prevention motivations (see below). They then completed a set of RAT problems, received feedback, and explained their performance as in Study 1. Finally, participants predicted their hypothetical performance on a future set of RAT problems and completed measures of post-task affect.

#### *Measuring promotion and prevention motivations*

Analogous to the priming manipulations in Study 1 that temporarily activated either people's aspirations or obligations, individual differences in promotion and prevention motivations were measured by assessing the chronic activation (i.e., accessibility) of people's aspirations and obligations, respectively (see Higgins et al., 1997). Just as chronic attitude accessibility can serve as an index of attitude strength (e.g., Fazio, 1995), much research has shown that chronic accessibility for promotion- and prevention-relevant goals can serve as indices of motivational strength (Higgins et al., 1997; Liberman et al., 2001; Molden & Higgins, 2004). Participants entered several of their aspirations and obligations one at a time on a computer. After each entry they rated both how much they aspired (or felt obligated) to possess the attribute, and how much they actually possessed it. Reaction times for all responses concerning aspirations were used to calculate promotion strength, and reaction times for all responses concerning obligations were used to calculate prevention strength (for complete details see Higgins et al., 1997). Because each participant's individual reaction times are all highly correlated, these separate indices are only meaningful when differences between promotion strength and prevention strength scores are examined.

#### *Measuring affect and predictions for future performance*

After rating explanations for their performance as before, participants predicted on a scale from the *10th percentile* to the *90th percentile* in increments of ten how they would perform compared to other students if given a new set of RAT problems. As an additional check to confirm that promotion-focused and prevention-focused participants did not differ in their experiences of the success and failure manipulations, participants then rated on 1 (*none*) to 9 (*very much*) scales their current positive affect (i.e., *happiness*, *calmness*, *satisfaction*, and *relaxation*; $\alpha = .85$) and negative affect (i.e., *disappointment*, *nervousness*, *discouragement*, and *tenseness*; $\alpha = .80$).

#### *Results and discussion*

Prevention strength scores were subtracted from promotion strength scores to create a chronic motivational focus index (see Higgins et al., 1997; Liberman et al., 2001). Main effect analyses were then performed using regressions including this index and a dummy-coded performance condition variable. Higher-order interactions were tested by adding a focus × condition term in a second step. All means reported were estimated from the final regression equation, and all simple effects for participants with a particular chronic focus were tested at 1 *SD* above (for promotion-focused individuals) or below (for prevention-focused individuals) the zero point of the focus index.

#### *Manipulation checks*

Participants in the success condition again scored much higher on the RAT ($M = 10.4$) than those in the failure condition ($M = 2.3$, $t(93) = 18.8$, $p < .001$). Furthermore, compared to those in the failure condition, those in the success condition reported significantly more positive affect ($M$'s = 6.6 vs. 4.7; $t(93) = 5.7$, $p < .001$), and significantly less negative affect ($M$'s = 2.2 vs. 3.8; $t(93) = 5.4$,

**Table 4**
Effects of chronic promotion or prevention motivations on the extremity and spread of participants' ratings of explanations for their performance

| Measure | Promotion *M* | Prevention *M* | *t*(89) |
|---|---|---|---|
| Extremity | 2.0 | 2.3 | 2.0** |
| *SD* | 2.2 | 2.4 | 1.6† |
| Range | 5.4 | 6.1 | 2.1** |

*Note.* †$p = .11$; **$p < .05$.
The means presented are estimated values at 1 *SD* above or below a score of 0 on the chronic promotion or prevention focus index.

**Table 5**
Percentage of participants with chronic promotion or prevention motivations who rated personal, circumstantial, or both explanations as having the greatest contribution to their performance following success or failure

| Condition | Type of explanation: Personal (%) | Circumstantial (%) | Both (%) | $\chi^2(2, N = 24)$ |
|---|---|---|---|---|
| *Prevention* | | | | |
| Success | 57 | 32 | 11 | 9.1*** |
| Failure | 14 | 69 | 17 | 21.2**** |
| *Promotion* | | | | |
| Success | 41 | 35 | 24 | 0.8 |
| Failure | 31 | 63 | 6 | 7.6** |

*Note.* **$p < .05$; ***$p < .01$; ****$p < .001$.
Those who scored below 0 on the chronic motivational focus index were categorized as prevention-focused and those who scored above 0 on this index were categorized as promotion-focused.

$p < .001$). These results suggest that participants did indeed experience success or failure as intended. There were no simple or higher-order effects of chronic promotion or prevention motivations on either measure (*t*'s < 1.2), which further indicates that neither promotion-focused nor prevention-focused people felt more pleased about their perceived success or more upset about their perceived failure.[3]

In order to once again ensure that participants were indeed generally uncertain about the causes for their performance, we initially examined the overall frequency with which participants rated each of the six types of explanation as the one that contributed most to their performance. As in Study 1, no single explanation was chosen by more than 30% of the participants. Furthermore, these results were again the same whether the success or failure conditions were considered separately or pooled together. Thus, it appears that the circumstances in which participants made their judgments were largely uncertain and that no one explanation was clearly preferred by a majority of people in this study as well.

*Narrow or open selection of explanations*

Extremity and spread measures were calculated as in Study 1. Overall, participants who received success feedback showed less spread among their explanations than those who received failure feedback ($\beta = -.35$, $t(94) = 1.8$, $p < .10$ for the range measure; $\beta = -.40$, $t(94) = 2.0$, $p < .05$ for the *SD* measure). There were no significant interactions between performance feedback and participants' promotion or prevention focus (*t*'s < 1.2). Table 4 illustrates the main effects of participants' promotion or prevention focus, which replicate the previous study. A within-study meta-analysis (see Hayes, 1998), in which the effects of participants' motivational focus were again pooled across all three of the extremity and spread measures using Strube's (1985) method for correlated dependent variables, revealed a significant overall effect ($Z = 2.01$, $p < .05$). Analyses of the average magnitude of participants' ratings across all six explanations did not reveal a similar effect, again indicating that participants' motivations did not affect how plausible they found this set of explanations as a whole.

*Favoring more or less self-serving explanations*

Comparative indices of the explanations participants most favored and rated as highly contributing to their performance were calculated as in Study 1. Ratings for ability and effort explanations were again categorized as accepting personal responsibility for one's performance ($r = .29$, $p < .01$), whereas ratings for task difficulty, opportunities for practice, luck, or mood explanations were categorized as claiming that circumstantial factors determined one's performance (correlations between practice ratings and other external factors ranged from $r = .08$–$.28$, *p*'s < .05 for all correlations except for with luck).

The results presented in Tables 5 and 6 further replicate Study 1. Table 5 reveals that prevention-focused individuals (those with negative scores on the focus index) showed a clear self-serving pattern in their most favored explanations for success versus failure ($\chi^2(2, N = 64) = 13.5$, $p = .001$). In contrast, promotion-focused individuals (those with positive scores on the focus index) showed a non-significant self-serving pattern in their most favored explanations ($\chi^2(2, N = 33) = 3.1$, $p = .21$). The overall focus × performance × choice effect ($\chi^2(2, N = 97) = 4.3$, $p = .12$) did not reach significance.

Follow-up analyses in which participants who equally favored personal and circumstantial explanations were excluded did not alter the significance of any of the simple or higher-order effects reported. Furthermore, although they are once again somewhat compromised by low cell-counts, multinomial logistic analyses conducted without classifying participants' favored explanations into personal or circumstantial categories also suggest similar conclusions. For prevention-focused individuals, experiences of success or failure had a significant omnibus effect on the explanations they selected ($\chi^2(1, N = 97) = 15.44$, $p < .001$). These individuals were more likely to select ability and effort explanations following success, but more likely to select task difficulty and practice explanations following failure. However, for promotion-focused individuals, experiences of success or failure did not have a significant omnibus effect on the explanations they selected ($\chi^2(1, N = 97) = 0.06$, $p = .80$).

The results for the highly-contributing explanations were similar. The planned-contrasts in Table 6 reveal that prevention-focused individuals showed significant (or near-significant) self-serving patterns in the number of personal and circumstantial explanations selected. Promotion-focused individuals did not show significant self-serving patterns for either type of explanation. A significant main effect of chronic focus was also found ($t(94) = 2.4$, $p = .02$). Examining these results in terms of whether people favored more personal or circumstantial explanations within each performance condition, regression analyses on a difference score between personal and circumstantial selections showed a significant self-serving effect of success or failure for prevention-focused individuals ($t(93) = 3.2$, $p = .002$), but no effect of success or failure for promotion-focused individuals ($t(93) = 1.1$, $p = .26$). The overall focus × performance interaction for this explanation difference score again did not reach significance ($t(93) = 1.1$, $p = .28$).

Additional analyses examined the extent to which prevention motivations increased or promotion motivations decreased

[3] Unlike past work (Higgins et al., 1997; see Molden et al., 2008), promotion motivations were not more strongly associated with elation- and dejection-related emotions and prevention motivations were not more strongly associated with relaxation- and agitation-related emotions. Because emotional differences were not our primary focus in this study, however, we did not take baseline affect measures and the single assessment following performance may not have been sensitive enough to detect such differences.

self-serving inferences by comparing the explanations of individuals with either strong promotion or strong prevention motivations, as reported in Tables 5 and 6, to those of individuals who did not differ in the strength of these motivations (i.e., with no predominant chronic focus). This was done by using regressions to test simple effects of success or failure on people's explanations for performance at scores of 0 (i.e., equivalent promotion and prevention motivations) on the motivational focus index (see Cohen, Cohen, West, & Aiken, 2003). Results showed that for individuals with no predominant chronic focus, performance significantly (or near significantly) influenced (a) which explanations were most favored ($\chi^2(1, N = 97) = 7.78$, $p < .01$), (b) the number of internal explanations selected ($\beta = -.23$, $t(93) = 1.6$, $p = .11$), and (c) the number of external explanations selected ($\beta = .48$, $t(93) = 2.5$, $p < .05$). Direct comparisons between these findings and Tables 5 and 6 suggest that prevention motivations did not greatly enhance typical self-serving inferences, but promotion motivations attenuated such inferences.

*Self-serving predictions of future performance*

Preliminary regression analyses on participants' predictions of how they would perform on a new set of RAT problems revealed only a strong main effect of performance ($t(92) = 5.8$, $p < .001$). Those in the failure condition expected to do much worse ($M = 47$th percentile) than those in the success condition ($M = 66$th percentile). In general, people's ratings of person-centered causes for performance should be strongly related to predictions for future performance (Weiner, 1985). Previous work, however, has shown a self-serving pattern of people generalizing strongly from self-judgments following success but not following failure (Beauregard & Dunning, 1998; Ditto et al., 1998; Dunning & Beauregard, 2000). That is, when people think that their current skills and efforts have led to success, they are happy to believe that these skills and efforts will produce more success in the future; however, when people think that current skills and efforts have led to failure, they tend to doubt that these skills and efforts will similarly lead to failure in the future.

To examine these patterns of self-serving generalization for promotion-focused and prevention-focused individuals, predictions of future performance were reverse-scored in the failure condition so that predicting future success from personal responsibility for current success and predicting future failure from personal responsibility for current failure would both produce positive regression coefficients. The hierarchical regression analyses described above were then repeated including the simple and high-order effects of participants' average endorsement of personal explanations (i.e., ability and effort) for performance. Overall, the relationship between personal explanations for current performance and predictions of future performance was strong and significant following success ($\beta = .41$, $t(89) = 2.9$, $p < .01$), but weak and non-significant following failure ($\beta = .10$, $t(89) = 0.79$, $p = .43$), confirming a general self-serving pattern in generalization (as indicated by a near-significant performance × personal-explanation rating interaction; $\beta = .19$, $t(88) = 1.8$, $p = .08$).[4]

If prevention-focused individuals not only select more self-serving explanations, but also make more self-serving generalizations, significantly more positive regression coefficients between endorsements of personal explanations and predictions for future performance should also be found for these individuals following success than following failure. The findings presented in Table 7 support this hypothesis. Prevention-focused individuals strongly generalized after success, but not after failure, resulting in a significant self-serving difference between performance conditions (as indicated by a significant performance × personal-explanation rating interaction; $t(88) = 2.4$, $p < .05$). Promotion-focused individuals, in contrast, showed significant generalization following both success and failure, with no differences between conditions (as indicated by a non-significant performance × personal-explanation rating interaction $t(88) = .4$, $p = .71$). That is, unlike the general self-serving trend, promotion-focused individuals *were* willing to predict future failure to the extent to which they judged themselves responsible for their current failure. This difference between the generalizations shown by promotion-focused and prevention-focused individuals was confirmed by a near-significant chronic motivational focus × performance × personal-explanation rating interaction on predictions of future performance ($t(88) = 1.7$, $p = .09$).

Additional analyses again examined the extent to which prevention motivations increased or promotion motivations decreased self-serving generalizations. Regression analyses testing simple effects of success or failure on generalization at scores of 0 on the motivational focus index revealed that individuals with no chronic focus showed significant generalization following success ($\beta = .45$, $t(88) = 3.2$, $p < .01$), but not following failure, ($\beta = .09$, $t(88) = .70$, $p = .48$). This self-serving difference between performance conditions was near significant ($\beta = -.36$, $t(88) = 1.9$, $p = .06$). Direct comparisons between these findings and Table 7 again indicate that prevention motivations did not greatly enhance typical self-serving generalizations from personal explanations of current performance to predictions for future performance, but promotion motivations attenuated such generalizations.

Study 2 therefore provides further support for hypotheses concerning the effects of preferences for self-serving outcomes and preferences for eager versus vigilant strategies on judgment. As in Study 1, regardless of perceived success or failure, prevention-focused individuals employed vigilant judgment strategies and elevated select causes above others to explain their performance, whereas promotion-focused individuals employed eager judgment strategies and more evenly endorsed multiple causes. Furthermore, the few explanations favored by prevention-focused individuals were again those associated with clear self-serving conclusions, whereas the more open selection of explanations by promotion-focused individuals was associated with weaker self-serving conclusions. Extending Study 1, prevention-focused individuals also displayed more self-serving generalizations from their perceptions of personal responsibility for their performance, showing higher correlations between these perceptions and predictions of future performance following success than they did following failure, whereas promotion-focused individuals did not generalize in such a self-serving manner.

## General discussion

The present studies have revealed both independent and joint effects of two separate motivations—preferences for self-serving outcomes and preferences for eager versus vigilant strategies—on judgment processes. Independent of any self-serving motivations, when explaining their performance, promotion-focused individuals employed eager strategies and a more balanced endorsement of multiple causes, whereas prevention-focused individuals preferred vigilant strategies and a narrower selection of a few favored causes. However, whereas preferences for vigilant strategies supported people's tendencies for self-serving explanations and

[4] This overall pattern of generalization still holds when the relationship between predictions of future performance and either ability explanations for current performance ($\beta = .49$, $t(89) = 3.5$, $p < .001$ after success and $\beta = .28$, $t(89) = 2.2$, $p < .05$ after failure) or effort explanations for current performance ($\beta = .23$, $t(89) = 1.9$, $p = .05$ after success and $\beta = -.05$, $t(89) = 0.44$, $p = .66$ after failure) was examined separately. That is, the relationship between each of these explanations and predictions for future performance was more positive following success than following failure. Thus, in this study, people were generalizing from both of these types of personal explanation for performance in similar, self-serving, ways.

**Table 6**
Effects of chronic promotion or prevention motivations on the number of personal or circumstantial explanations selected as "very much contributing" to performance following success or failure

| | Prevention | | | Promotion | | |
|---|---|---|---|---|---|---|
| | Success | Failure | | Success | Failure | |
| Measure | *M* | *M* | *t*(93) | *M* | *M* | *t*(93) |
| Personal selections | 1.13 | 0.78 | 1.7$^{\dagger}$ | 0.76 | 0.63 | 0.4 |
| Circumstantial selections | 1.02 | 1.63 | 2.4$^{**}$ | 0.81 | 1.15 | 1.0 |

*Note.* $^{\dagger}p < .10$; $^{**}p < .05$.
Selection of personal or circumstantial explanations as very much contributing to performance was defined as rating these types of explanations 7 or higher on a 9-point scale. The means presented are estimated values at 1 *SD* above or below a score of 0 on the chronic motivational focus index.

generalizations following success or failure, eager strategies attenuated these self-serving tendencies.

Although across both Studies 1 and 2 the findings were generally clear and consistent, several of the three-way interactions testing the difference between the effects of success or failure on the self-serving responses of promotion-focused versus prevention-focused participants were either marginally significant or non-significant. Therefore, in order to more carefully assess how reliable the observed differences were, a meta-analytic comparison (Rosenthal, 1991) was conducted on the combined effect-sizes for the influence of performance on promotion-focused and prevention-focused individuals' explanations and generalizations across both studies. This analysis revealed that, overall, although manipulations of success versus failure resulted in significantly self-serving judgments for each group ($Z = 3.46$, $p < .01$ for promotion-focused individuals and $Z = 7.73$, $p < .0001$ for prevention-focused individuals), this self-serving effect was indeed significantly stronger for prevention-focused individuals ($Z = 3.01$, $p < .01$), which confirms our primary hypothesis.

### *Alternative mechanisms for the attenuation of self-serving judgments*

Throughout this article, we have discussed the effects of promotion or prevention motivations on the self-serving outcomes of people's judgments in terms of the general preferences for different types of judgment strategies evoked by such motivations. However, there are several alternate hypotheses that might be offered for this pattern of results. One possibility is that success and failure were not experienced as intensely by promotion-focused individuals, which therefore led them to feel less need to respond in a self-serving manner (cf. Gollwitzer et al., 1982). However, the affect measures taken following success or failure in Study 2 indicated that motivations for promotion or prevention did not have any effect on how good people felt after success or how bad people felt after failure, casting doubt upon this alternative mechanism.

Another related alternative mechanism for our findings is that the weaker self-serving inferences shown by promotion-focused individuals simply reflect that the activation of promotion motivations naturally elicits greater feelings of self-worth. That is, compared to one's obligations, thinking about one's aspirations may provide a greater boost to self-esteem or emphasize more authentic aspects of the self, both of which could attenuate self-serving judgments (Arndt, Schimel, Greenberg, & Pyszczynski, 2002; Dunning & Beauregard, 2000). To explore this possibility, additional data were collected in which a new sample of 44 students first described either their aspirations or obligations exactly as in Study 1. Everyone then rated how much these aspirations or obligations reflected their "true, inner self", were "enduring and stable", represented "potential accomplishments and achievements", and provided "feelings of competence and success". These questions were adapted from the Arndt et al. (2002) assessments of *intrinsic* (authentic and stable) versus *extrinsic* (dependent upon validation through achievement) aspects of the self. Finally, participants completed a short measure of state self-esteem adapted from Leary, Tambor, Terdal, and Downs (1995) and also used by Arndt and colleagues. Results showed no differences in the intrinsic ($t(42) = 1.5$, $p = .15$) or extrinsic ($t(42) = 1.4$, $p = .17$) qualities of aspirations or obligations. Furthermore, no differences were found in participants' state self-esteem following contemplation of aspirations versus obligations ($t(42) = 1.2$, $p = .22$). Thus, these mechanisms also do not appear to provide strong alternative explanations for the differences in self-serving judgments observed here.

Finally, one might also propose that promotion motivations could somehow have evoked greater concerns with accuracy than prevention motivations. Previous research has shown that, at least under some circumstances, when motivations for accurate self-assessment are activated, this too can attenuate self-serving tendencies in people's judgments (e.g., Kunda, 1990; Trope & Neter, 1994). However, a series of studies by Förster, Higgins, and Bianco (2003) that directly examined the relationship between motivations for promotion or prevention and concerns with accuracy has demonstrated that it is actually prevention motivations that typically lead to a greater focus on accurate judgments. Across a variety of tasks in which participants attempted to solve problems and complete proofreading exercises within certain time limits, prevention-focused individuals consistently favored working more slowly so as to vigilantly maximize their accuracy on the tasks they were able to complete whereas promotion-focused individuals favored working more quickly and eagerly completing more tasks, even at the cost of reduced accuracy. Therefore, difference in accuracy motivations also seem to be an unlikely candidate for explaining the findings of the present studies.

**Table 7**
Magnitude of generalization from personal responsibility for current performance to predictions of future performance by participants with a chronic promotion or prevention focus following success or failure

| | Prevention | | Promotion | |
|---|---|---|---|---|
| | Success | Failure | Success | Failure |
| Explanation | *β* | *β* | *β* | *β* |
| Personal | .51$^{**}$ | −.17 | .37$^{**}$ | .35$^{**}$ |

*Note.* $^{**}p < .05$.
Standardized coefficients were calculated from regression analyses estimating participants' predictions of future performance from their endorsement of personal explanations for their current performance. Predictions of future performance were reverse-scored in the failure conditions so that greater generalization to future success from personal explanations of current success and greater generalization to future failure from personal explanations of current failure both resulted in more positive regression coefficients.

### *Implications of preferred judgment strategies for research on motivated cognition*

Despite the potential moderators of self-serving judgments that were noted in the previous section, on the whole, the effects of self-serving motivations are typically found to be quite robust. Much recent research has shown that when two competing goals have

been activated (e.g., to reach self-serving conclusions but to also make accurate self-assessments), one goal typically becomes more central and can even inhibit the other (see Fishbach & Ferguson, 2007; Kruglanski et al., 2002). Moreover, studies that have directly compared the extent to which people may prioritize goals to reach self-serving conclusions over other competing goals have shown that it is most often these other competitors that are inhibited (Sedikides, 1993). That is, it is typically only in special circumstances, such as when people's self-worth, confidence, or positive feelings have already been additionally bolstered in some way, that self-serving motivations are overcome and attenuated by other goals (e.g., Arndt et al., 2002; Raghunathan & Trope, 2002; Trope & Neter, 1994).

Given the prominent effects of self-serving motivations on judgment that are typically observed (Dunning, 2003; Molden & Higgins, 2005), it is therefore noteworthy that such motivations did not overwhelm people's preferences for eager or vigilant judgment strategies. Following failure on an intellectual task, preferences for the self-protective outcome of endorsing only a few circumstantial explanations for this failure could easily have overpowered people's strategic preferences for a more narrow or open consideration of alternatives. However, in the present studies, strategic preferences continued to affect people's judgments in these circumstances. These findings not only demonstrate how generally important such preferences potentially may be in people's judgment processes (see also Liberman et al., 2001; Molden & Higgins, 2004), but also raise interesting questions about the extent to which the inhibitory links that exist among preferences for different outcomes are weaker or less common among preferred judgment outcomes and preferred judgment strategies. Future research on this topic could prove valuable for further understanding how people balance the variety of different concerns that arise during judgment and decision making.

The present findings also have important implications for the general influence of self-serving motivations in judgment processes. One of the primary routes through which people's preferences for self-serving outcomes influence judgment is by biasing the consideration of more or less self-flattering information (Kunda, 1990; Molden & Higgins, 2005). Because the eager judgment strategies inspired by promotion motivations produce a more balanced consideration of potentially relevant information, regardless of how self-flattering it is, these strategies could reduce self-serving biases on many judgments besides explanations of one's own performance (e.g., evaluations of evidence or opinions that question cherished values; see Ditto et al., 1998; Kunda, 1990).

Promotion-focused individuals should not always be expected to be less self-serving in their judgments, however. The more open consideration of information associated with eager strategic preferences could reduce, and the narrower consideration of information associated with vigilant strategic preferences could enhance, whatever conclusions people are currently motivated to reach—self-serving or otherwise. For example, people sometimes show preferences for *self-derogating* outcomes during judgment (e.g., when they are depressed, have low self-esteem, or are members of cultures in which social harmony is prioritized over individual accomplishments; see Heine, 2003; Peterson & Seligman, 1984). In these circumstances, the eager judgment strategies inspired by promotion motivations could attenuate these preferences as well and lead to less self-derogating judgments than the vigilant judgment strategies inspired by prevention motivations.

## Conclusions

To conclude, this article has pursued a distinction between motives induced by preferences for particular judgment outcomes and motives induced by preferences for particular judgment strategies. Findings that such motives have separate and joint effects on judgment highlight the importance of examining more closely strategic preferences in addition to outcome preferences, as well as exploring the simultaneous effects of both types of motivational preferences on thinking and reasoning. Investigating both what people want to conclude and how they prefer to go about seeking such conclusions could provide a fruitful new approach to understanding motivated cognition.

## References


Arndt, J., Schimel, J., Greenberg, J., & Pyszczynski, T. (2002). The intrinsic self and defensiveness: Evidence that activating the intrinsic self reduces self-handicapping and conformity. *Personality and Social Psychology Bulletin, 28*, 671–683.

Baumeister, R.F., (1998). The self. In D. Gilbert, S. Fiske, G. Lindzey (Eds.). *The Handbook of Social Psychology*, (4th ed., Vol.1, pp. 680-740) New York: McGraw-Hill.

Beauregard, K. S., & Dunning, D. (1998). Turning up the contrast: Self-enhancement motives prompt egocentric contrast effects in social judgment. *Journal of Personality and Social Psychology, 74*, 606–621.

Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin, 119*, 197–253.

Camacho, C. J., Higgins, E. T., & Lugar, L. (2003). Moral value transfer from regulatory fit: What feels right is right and what feels wrong is wrong. *Journal of Personality and Social Psychology, 84*, 498–510.

Campbell, J. D. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology, 59*, 538–549.

Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration. *Review of General Psychology, 1*, 23–43.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes, 69*, 117–132.

Ditto, P. H., Scepansky, J. A., Munro, G. D., Apanovitch, A. M., & Lockhart, L. K. (1998). Motivated sensitivity to preference-inconsistent information. *Journal of Personality and Social Psychology, 75*, 53–69.

Dunning, D. (2003). The zealous self-affirmer: How and why the self lurks so pervasively behind social judgment. In S. J. Spencer, S. Fein, M. P. Zanna, & J. M. Olson (Eds.). *Motivated social perception: The Ontario symposium vol. 9* (pp. 45–72). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Dunning, D., & Beauregard, K. S. (2000). Regulating impressions of others to affirm images of the self. *Social Cognition, 18*, 198–222.

Dunning, D., Leuenberger, A., & Sherman, D. A. (1995). A new look at motivated inference: Are self serving theories of success a product of motivational forces? *Journal of Personality and Social Psychology, 69*, 58–68.

Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 247–282). Mahwah, NJ: Lawrence Erlbaum Associates, Inc..

Fishbach, A., & Ferguson, M. J. (2007). The goal construct in social psychology. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (2nd ed., pp. 490–515). New York: Guilford.

Förster, J., Higgins, E. T., & Bianco, A. T. (2003). Speed/accuracy decisions in task performance: Built in trade-off of separate strategic concerns. *Organization Behavior and Human Decision Processes, 90*, 148–164.

Friedman, R. S., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology, 81*, 1001–1013.

Gollwitzer, P. M., Earle, W. B., & Stephan, W. G. (1982). Affect as a determinant of egotism: Residual excitation and performance attributions. *Journal of Personality and Social Psychology, 43*(43), 702–709.

Hayes, A. F. (1998). Within-study meta-analysis: Pooling the significance of doubly nonindependent (nonoverlapping) correlations. *Psychological Methods, 3*, 32–45.

Heatherton, T. F., & Vohs, K. D. (2000). Interpersonal evaluations following threats to self: Role of self-esteem. *Journal of Personality and Social Psychology, 78*, 725–736.

Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.

Heine, S. J. (2003). An exploration of cultural variation in self-enhancing and self-improving motivations. In V. Murphy-Berman & J. Berman (Eds.). *Cross-cultural differences in perspectives on the self: Nebraska symposium on motivation* (Vol. 49, pp. 118–145). Lincoln, Nebraska: University of Nebraska Press.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist, 52*, 1280–1300.

Higgins, E. T., Idson, L. C., Freitas, A. L., Spiegel, S., & Molden, D. C. (2003). Transfer of value from fit. *Journal of Personality and Social Psychology, 84*, 1140–1153.

Higgins, E. T., & Molden, D. C. (2003). How strategies for making judgments and decisions affect cognition: Motivated cognition revisited. In G. V. Bodenhausen & A. J. Lambert (Eds.), *Foundations of social cognition: A festschrift in honor of Robert S Wyer, Jr.*. Mahwah, NJ: Lawrence Erlbaum Associates.

Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology, 72*, 515–525.

Kihlstrom, J. F. (1996). RAT norms. Retrieved July 25, 2006 from J. F. Kihlstrom's personal website http://ist-socrates.berkeley.edu/~kihlstrm/RATest.htm.

Kruglanski, A. W. (1996). Motivated social cognition: Principles of the interface. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 493–520). New York: The Guilford Press.

Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Keppler, D. (2002). A theory of goal systems. In M. P. Zanna (Ed.). *Advances in experimental social psychology* (Vol. 34, pp. 331–378). New York: Academic Press.

Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing". *Psychological Review, 103*, 263–283.

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin, 108*, 480–498.

Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology, 68*, 518–530.

Liberman, A., & Chaiken, S. (1992). Defensive processing of personally relevant health messages. *Personality and Social Psychology Bulletin, 18*, 669–679.

Liberman, N., Molden, D. C., Idson, L. C., & Higgins, E. T. (2001). Promotion and prevention focus on alternative hypotheses: Implications for attributional functions. *Journal of Personality and Social Psychology, 80*, 5–18.

McFarlin, D. B., & Blascovich, J. (1984). On the remote associates test (RAT) as an alternative to illusory feedback: A methodological note. *Basic and Applied Social Psychology, 5*, 223–229.

Mednick, S. A. (1962). The associative basis of the creative process. *Psychological Review, 69*, 220–232.

Molden, D. C., & Dweck, C. S. (2006). Finding "meaning" in psychology: A lay theories approach to self-regulation, social perception, and social development. *American Psychologist, 61*, 192–203.

Molden, D. C., Lee, A. Y., & Higgins, E. T. (2008). Motivations for promotion and prevention. In J. Shah & W. Gardner (Eds.), *Handbook of motivation science* (pp. 169–187). New York: Guilford Press.

Molden, D. C., & Higgins, E. T. (2004). Categorization under uncertainty: Resolving vagueness and ambiguity with eager versus vigilant strategies. *Social Cognition, 22*, 248–277.

Molden, D. C., & Higgins, E. T. (2005). Motivated thinking. In K. Holyoak & R. G. Morrison (Eds.), *The Cambridge handbook of thinking and reasoning* (pp. 295–320). New York: Cambridge University Press.

Peterson, C., & Seligman, M. E. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review, 91*, 347–374.

Pyszczynski, T., & Greenberg, J. (1987). Toward an integration of cognitive and motivational perspectives on social inference: A biased hypothesis testing model. In L. Berokowitz (Ed.). *Advances in experimental social psychology* (Vol. 20, pp. 297–340). New York: Academic Press.

Raghunathan, R., & Trope, Y. (2002). Walking the tightrope between feeling good and being accurate: Mood as a resource in processing persuasive messages. *Journal of Personality and Social Psychology, 83*, 510–525.

Roese, N. J., Hur, T., & Pennington, G. L. (1999). Counterfactual thinking and regulatory focus: Implications for action versus inaction and sufficiency versus necessity. *Journal of Personality and Social Psychology, 77*, 1109–1120.

Rosenthal, R. (1991). *Meta-analytic procedures for social research*. Newbury Park, CA: Sage Publications.

Sedikides, C. (1993). Assessment, enhancement, and verification determinants of the self-evaluation process. *Journal of Personality and Social Psychology, 65*, 317–338.

Sinclair, L., & Kunda, Z. (1999). Reactions to a black professional: Motivated inhibition and activation and conflicting stereotypes. *Journal of Personality and Social Psychology, 77*, 885–904.

Strube, M. J. (1985). Combining and comparing significance levels from nonindependent hypothesis tests. *Psychological Bulletin, 97*, 334–341.

Tanner, W. P., Jr., & Swets, J. A. (1954). A decision-making theory of visual detection. *Psychological Review, 61*, 401–409.

Tesser, A. (2000). On the confluence of self-esteem maintenance mechanisms. *Personality and Social Psychology Review, 4*, 290–299.

Trope, Y., & Neter, E. (1994). Reconciling competing motives in self-evaluation: The role of self-control in feedback seeking. *Journal of Personality and Social Psychology, 66*, 646–657.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92*, 548–573.

Zuckerman, M. (1979). Attribution of success and failure revisited, or: The motivational bias is alive and well in attribution theory. *Journal of Personality and Social Psychology, 47*, 245–287.