Contingent Reliance on the Affect Heuristic as a Function of Regulatory Focus

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Results from four studies show that the reliance on affect as a heuristic of judgment and decision-making is more pronounced under a *promotion focus* than under a *prevention focus*. Two different manifestations of this phenomenon were observed. Studies 1–3 show that different types of affective inputs are weighted more heavily under promotion than under prevention in person-impression formation, product evaluations, and social recommendations. Study 4 additionally shows that valuations performed under promotion are more scope-insensitive—a characteristic of affect-based valuations—than valuations performed under prevention. The greater reliance on affect as a heuristic under promotion seems to arise because promotion-focused individuals tend to find affective inputs more diagnostic, not because promotion increases the reliance on peripheral information *per se*.

Although decision research has historically focused on the cognitive processes underlying decision making, a growing body of research from multiple disciplines suggests that affective processes play an important role as well. In particular, there is strong evidence that decisions are often based on subjective affective responses to the options, which appear to be seen as indicative of the options' values (Bechara, Damasio, Tranel, & Damasio, 1997; Loewenstein, Weber, Hsee, & Welch, 2001; Pham, 1998; Schwarz & Clore, 1983). This process is known as the "affect heuristic" in behavioral decision research (Slovic, Finucane, Peters, & MacGregor, 2002), the "How-do-I-feel-about-it?" heuristic in social psychology (Schwarz & Clore, 1988) and consumer research (Pham, 1998), and the "somatic marker hypothesis" in some neuroscience circles (Damasio, 1994).

Behavioral decision research on the affect heuristic has mostly focused on the judgmental *implications* of relying on subjective affective responses as opposed to cognitive reasoning processes in judgments and decisions (Finucane, Alhakami, Slovic, & Johnson, 2000; Hsee & Rottenstreich, 2004; Ratner & Herbst, 2005; Rottenstreich & Hsee, 2001; Tversky & Griffin, 1991). For example, affective valuations of risks have been found to be less sensitive to probability information compared to cognitive valuations of the same risks (Rottenstreich & Hsee, 2001). Affective evaluations have also been found to be more sensitive to social comparisons than cognitive evaluations (Hsee, Zhang, Yu, & Xi, 2004; Tversky & Griffin, 1991). While research on the distinctive properties of affect-based judgments and decisions has been accumulating rapidly (see Pham, 2007, for a review), much less attention has been paid to the *determinants* of the reliance on affect in judgments and decisions. In other words, what causes people to rely on their subjective affective responses to make judgments and decisions, to begin with?

The purpose of this research is to test the hypothesis that an important determinant of the reliance on affect as a heuristic for evaluations and decisions is the self-regulatory orientation of the decision-maker. Building on recent findings by Pham and Avnet (2004), we propose that the reliance on affect as an evaluation heuristic is more pronounced among decision-makers with a self-regulatory orientation known as a *promotion focus* than among those with a self-regulatory orientation known as a *prevention focus*. This hypothesis was tested in four studies across four different judgment contexts—people impression formations, consumer product evaluations, social recommendations, and contingent valuations of public goods—and using three different operationalizations of the affect heuristic.

Affect and Regulatory Focus in Judgments and Decisions

Affect as an Evaluation Heuristic

Numerous studies have shown that, even when objective information about the target is held constant, targets are evaluated more favorably and chosen more frequently when they are perceived to elicit pleasant feelings than when they are perceived to elicit unpleasant feelings. This phenomenon has been observed both with feelings that are genuine *integral* affective responses to the target, such as the emotional feelings elicited by a political candidate (Abelson, Kinder, Peters, & Fiske, 1982) or the excitement elicited by a new movie, and with feelings that arise *incidentally,* such as feelings from a preexisting mood state (Isen, Shalker, Clark, & Karp, 1978; Pham, 1998;

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Schwarz & Clore, 1983). Although different explanations have been offered for this phenomenon, several converge toward the notion that subjective affective responses to a target influence its evaluation because these responses are perceived to provide diagnostic information about the target (Schwarz & Clore, 1996). In other words, subjective affective responses to a target are often used as a proxy for the target's value (Damasio, 1994; Pham, 2004; Slovic et al., 2002).

Behavioral decision research has shown that, compared to evaluations based on cognitive assessments, evaluations based on such affective responses exhibit distinct properties (see Pham, 2007, for a review). First, affect-based evaluations tend to be more extreme and polarized than cognitive assessments (Ratner & Herbst, 2005; Sinaceur, Heath, & Cole, 2005; Yeung & Wyer, 2004). Second, affect-based evaluations tend to be less effortful and reached more rapidly (Pham, Cohen, Pracejus, & Hughes, 2001; Shiv & Fedorikhin, 1999; Verplanken, Hofstee, & Janssen, 1998). Third, affect-based evaluations tend to be more myopic and present-oriented (Loewenstein, 1996; McClure, Laibson, Loewenstein, & Cohen, 2004). Fourth, affect-based evaluations tend to be less sensitive to the numerical magnitude of the target object—a phenomenon known as scope-insensitivity (Fetherstonhaugh, Slovic, Johnson, & Friedrich, 1997; Hsee & Rottenstreich, 2004)—and less sensitive to the probability that surrounds it—a phenomenon known as probability neglect (Loewenstein et al., 2001; Rottenstreich & Hsee, 2001; Sunstein, 2003). Finally, affect-based evaluations tend to be more reference-dependent in that they are more sensitive to outcome comparisons (Medvec, Madey, & Gilovich, 1995; Mellers, Schwartz, Ho, & Ritov, 1997) and social comparisons (Hsee, Zhang, Yu, & Xi, 2003; Tversky & Griffin, 1991).

Previous behavioral decision research on affect has thus mostly focused on analyzing *how* judgments and decisions based on affect differ from those based on cognitive reasoning processes. However, a full understanding of the role of affect in judgment and decision making also calls for an understanding of the *determinants* of the reliance on affect as a heuristic. In other words, *when* are judgments and decisions more likely to be based on affect in the first place? Building on recent work by Pham and Avnet (2004), we propose that one of these determinants is the decision-maker's regulatory focus.

Regulatory Focus Theory

According to regulatory focus theory (Higgins, 1987), human self-regulation involves two separate systems: the *promotion* system, which originates in the regulation of growth and nurturance needs, and the *prevention* system, which originates in the regulation of protection and security needs. The major distinction between these two systems lies in their strategic orientations in goal pursuit: the promotion system relies primarily on approach-oriented strategies, whereas the prevention system relies primarily on avoidance-oriented strategies. Because promotion-focused regulation emphasizes approach-oriented strategies, it is characterized by an eager form of exploration that encourages the seizing of opportunities. In signal detection terms, promotion is geared toward maximizing "hits" and minimizing "misses" ("errors of omission"; see Crowe & Higgins, 1997). In contrast, because prevention-focused regulation emphasizes avoidance-oriented strategies, it is characterized by a vigilant form of exploration that stresses caution against mistakes. In signal detection terms, prevention is geared toward maximizing "correct rejections" and minimizing "false alarms" ("errors of commission"; Crowe & Higgins, 1997). The relative eagerness of promotion-focused individuals and relative vigilance of prevention-focused individuals is illustrated by the finding that, in recognition tasks, promotion-focused participants exhibit a risky bias, identifying more items as having appeared in the original list and committing more errors of commission, whereas prevention-focused participants exhibit a conservative bias, identifying fewer items as having appeared in the original list and committing more errors of omission (Crowe & Higgins, 1997). Similarly, in simple drawing tasks, promotion-focused individuals exhibit greater speed but lower accuracy, whereas prevention-focused individuals exhibit lower speed but greater accuracy (Förster, Higgins, & Bianco, 2003). Promotion-focused regulation is especially active under the pursuit of ideals, that is, the pursuit of wishes, dreams, and aspirations (Higgins, 1987; Higgins, Roney, Crowe, & Hymes, 1994). Prevention-focused regulation is more active under the pursuit of oughts, that is, the fulfillment of responsibilities, duties, and obligations (Higgins, 1987; Higgins et al., 1994).

It is important to note that promotion and prevention are motivational *states,* not personality traits. Both systems are assumed to coexist in every person and to be independent of each other. However, one or the other may be temporarily or chronically more active in a given individual. A promotion focus can be temporarily activated, for example, by priming a person's ideals (e.g., Higgins et al., 1994; Pham and Avnet, 2004) or by framing a task in an approach-oriented manner (e.g., Roney, Higgins, & Shah, 1995). Similarly, a prevention focus can be temporarily activated by priming a person's oughts or by framing a task in an avoidance-oriented manner.

Promotion, Prevention, and the Reliance on the Affect Heuristic

Several lines of argument suggest that the eager form of self-regulation that characterizes a promotion focus should encourage the reliance on affect in judgments and decisions, whereas the vigilant form of self-regulation that characterizes prevention should discourage this reliance. First, promotion-induced eagerness has been found to encourage the use of heuristics in general (Friedman & Förster, 2001) and to trigger an emphasis on speed over accuracy when the two are in conflict (Förster et al., 2003). To the extent that subjective affective responses provide a compelling means of evaluation that also tends to be more rapid and less effortful (Pham, Cohen et al., 2001; Verplanken et al., 1998; Zajonc, 1980), a promotion focus should encourage reliance on the affect heuristic. Relatedly, a prevention focus has been found to foster more analytical processing (Friedman & Förster, 2000), which should discourage reliance on the more holistic affect heuristic. Finally, states of eagerness have been found to encourage the reliance on internal inputs as opposed to external information, whereas states of vigilance have been found to produce the reverse (Bless, Mackie, & Schwarz, 1992; Bless, Schwarz, Clore, Golisano, & Rabe, 1996). To the extent that subjective affective responses are internal reactions to the environment as opposed to external information, reliance on such internal reactions should increase under promotion compared to prevention.

It is therefore proposed that an important determinant of whether decision-makers will rely on affect as an evaluation heuristic is their regulatory focus. A promotion focus will increase the reliance on affect in judgments and decisions, whereas a prevention focus will decrease it. This proposition should *not* be interpreted as meaning that promotion increases the reliance on nondiagnostic inputs or "peripheral cues" *per se,* nor that prevention increases the reliance on diagnostic inputs or "central information" *per se*. Rather, the proposition concerns the reliance on affective inputs *in particular*. In fact, we believe that promotion increases the reliance on affective inputs precisely because these inputs are perceived to be more diagnostic ("central") under promotion than under prevention (see Pham & Avnet, 2004).

Initial support for this general proposition comes from a series of studies conducted in a nondecision-making context by Pham and Avnet (2004). In these persuasion studies, the authors examined how consumers' regulatory focus moderates the persuasive impact of two types of information in advertisements: the visual aesthetic of the ad and the strength of product claims featured in the ad. Pham and Avnet (2004) found that the aesthetic of the ad had stronger influence on product evaluations under promotion than under prevention, whereas the strength of the product claims had stronger influence under prevention than under promotion. Pham and Avnet (2004) concluded that promotion increases the influence of affective information in persuasion, whereas prevention increases the influence of substantive information. These findings are generally consistent with the proposition that, compared to prevention, promotion increases reliance on the affect heuristic in judgment and decision making. However, these findings leave a number of issues unaddressed.

First, given that the Pham and Avnet (2004) studies were conducted in a persuasion setting, it is not clear that these findings would generalize to a broader range of judgments and decisions. Second, these studies focused on only one type of affective information: the aesthetic appeal of the ad. To demonstrate that promotion increases the reliance on *affect in general,* it is important to generalize these results to a broader range of affective inputs. In addition, one could argue that an increased influence of the ad's aesthetic under promotion does not necessarily indicate an increased reliance on affect. It may alternatively indicate an increased reliance on *any* peripheral persuasion cue, whether affective (e.g., background music) or cognitive (e.g., source credibility), whereas we argue that promotion does not increase the reliance on peripheral cues *per se*. Finally, the Pham and Avnet (2004) studies examined only one aspect of the reliance on affect as heuristic, namely the greater weighting of affective input. Support for the hypothesis that promotion increases the reliance on affect as a heuristic would be stronger if other aspects of this reliance were demonstrated.

In the present research, this hypothesis was tested across four studies. In the first study, it was tested in the context of person-impression formation. This context was chosen for two reasons. First, it allows us to evaluate whether the basic proposition extends beyond persuasion settings and generalizes to a broader range of judgments and decisions. Second, the person-impression formation context is one in which affective inputs (e.g., a person's likeability) are more comparable to "cognitive" inputs (e.g., the person's perceived competence) in terms of diagnosticity. In the second study, the hypothesis was tested in yet another context: consumer product evaluations. To provide a more direct test of the idea that promotion increases the weight attached to affect *in particular* (as opposed to other types of information), in this study the weight attached to affect was examined by manipulating participants' mood as they evaluated the target. In the third study, the hypothesis was tested in the context of social recommendations. To test the idea that

promotion-focused individuals attach greater weight to affective inputs indeed because they see them as diagnostic and not because these inputs are peripheral, the perceived relevance of affective information about the target was manipulated. The final study tested the hypothesis in yet another context: that of contingent valuations of the public good. Whereas in the first three studies the reliance on affect as a heuristic was examined by comparing the weights attached to affective inputs under promotion versus prevention, in the fourth study the reliance on affect as a heuristic was examined through a very different means. A distinctive characteristic of affect-based evaluations is that they tend to be more insensitive to the quantitative scope of the target stimulus than cognitive evaluations of the same stimuli. Building on this result, Study 4 tested the prediction that valuations performed under a promotion focus would be more scope-insensitive than valuations performed under a prevention focus. In Studies 1 and 2, regulatory focus was measured as a chronic individual difference variable. In Studies 3 and 4, it was manipulated experimentally.

Study 1

The purpose of this first study was to examine whether regulatory focus moderates the reliance on affective inputs in a non-persuasion domain: that of person-impression formation. This domain is particularly interesting because in impression formation, affective attributes of the target (e.g., friendliness, charm, physical attractiveness) are not necessarily less relevant than their more cognitive attributes (e.g., intelligence, competence, hard work) (unlike in typical persuasion settings, where affective inputs such as background music or ad aesthetic are often less diagnostic than cognitive inputs such as message claims).

The study was a semi-field study in which the targets were contestants on the popular reality-television show *Survivor,* which was in its fourth and fifth seasons at the time of the study. In this show 16 strangers were sent to an exotic remote location where they were to provide for themselves and compete against each other in various challenges. At the end of each hour-long episode, one of the contestants was voted out by the others, resulting in a gradual elimination of the contestants over the course of the season until a single contestant was eventually selected as the winner. The episodes were broadcast weekly over a period of 13–14 weeks. The show provided a unique context for this research. First, the show involved real people as targets as opposed to hypothetical characters. Second, because the show documented the contestants' lives and interactions over an extended period of time, it allowed for the formation of rich impressions about the contestants (unlike, for example, printed profiles or even game shows). Third, because the contestants were previously unknown prior to the show and because the study was conducted within a specific time frame while the show was airing, there was a high degree of standardization in the information that participants were exposed to about each contestant.

During the second part of the fourth and fifth seasons of *Survivor,* participants whose chronic regulatory focus was measured were asked to report their overall opinion of the contestants. After a one-day delay, participants were asked to rate each contestant on affective dimensions as well as on cognitive dimensions. It was predicted that affective ratings of the contestants would be more predictive of overall opinions of these contestants among participants with a relatively higher promotion focus than among those with a relatively higher prevention focus. Conversely, cognitive ratings of the contestants would be more predictive of overall opinions of these contestants among participants with a relatively higher prevention focus than among those with a relatively higher promotion focus.

Method

Participants and Design. Participants were 23 undergraduate and graduate students at Columbia University, 14 men and 9 women, who saw more than five episodes of either the fourth or fifth season of the TV show *Survivor* and were paid US $14 for their participation. (Because only individuals who were very familiar with the show and were available to participate within a specific time frame qualified for the study, very few potential participants were eligible. As a result, the number of participants was low and the data had to be gathered over two consecutive seasons.) Participants whose chronic regulatory focus was measured were asked to provide overall evaluations of multiple targets, whom they also rated along both affective and cognitive dimensions. The weights attached to affective versus cognitive inputs in participants' overall evaluations of the targets were inferred by regressing these evaluations onto participants' affective and cognitive assessments of these targets. These weights were then compared across levels of regulatory focus.

Procedure. The study was conducted after about two-thirds of the season's episodes had been broadcasted. It was administered in two sessions conducted one day apart in a lab setting between two episodes' airings. In the first session, participants were provided with the names and pictures of the contestants in one of two random sequences and asked to give their overall opinion of the 14 contestants who had

"survived" the first two episodes. (Only contestants who were on the air for more than two episodes were considered to ensure that the targets were sufficiently familiar to the participants.) These opinions were collected on three 7-point items anchored at "favorable/unfavorable evaluation," "positive/negative opinion," and "good/bad survivor" (α = .88). After reporting their overall opinions of the contestants, participants were asked to complete the Selves Questionnaire (Higgins, Bond, Klein, & Strauman, 1986), which was used to assess each participant's chronic regulatory focus. Participants were then asked to return the following day for a second session in which they would be asked additional questions about the show.

In the second session, participants were asked to provide both affective ratings and cognitive ratings of each contestant. Affective ratings of the contestants were collected on five 7-point items anchored at "charming/irritating," "friendly/unfriendly," "boring/exciting," "physically attractive/unattractive," and "cheerful/sad" (α = .77). Cognitive ratings of the contestants were collected on five 7-point items anchored at "responsible/irresponsible," "honest/dishonest," "competent/incompetent," "intelligent/not intelligent," and "hard-working/lazy" (α = .86) (see, e.g., Batra & Ahtola, 1991; Cuddy, Fiske, & Glick, 2008). Again, a picture of each contestant was provided next to each set of items. In one condition, participants rated all contestants on affective dimensions first then rated all contestants on cognitive dimensions. In the other condition, the order of the dimensions was reversed. Participants were then asked to provide some background information such as gender, age, and number of episodes watched, then thanked, paid, and debriefed.

Note that the fact that participants' overall impressions were assessed one day before their affective and cognitive assessments of the contestants mitigates the possibility of measurement-induced consistency between these overall impressions and their presumed antecedents. In addition, the fact that the two sessions were conducted on two consecutive days between two airings of the show minimizes the chance that participants were exposed to additional information about the contestants between the two sessions.

Chronic Regulatory Focus: The Selves Questionnaire. The Selves Questionnaire asks participants to list up to 10 attributes that they believe they possess (the actual self), up to 10 attributes that they aspire to possess (the ideal self), and up to 10 attributes that they perceive as their duty to possess (the ought self). Because promotion is known to be more engaged under the pursuit of ideals, chronic promotion activation is reflected in the degree of overlap between attributes listed as part of the ideal self and attributes listed as part of the actual self. Similarly, because prevention is known to be more engaged under the pursuit of oughts, chronic prevention activation is reflected in the degree of overlap between attributes listed as part of the ought self and attributes listed as part of the actual self (Brockner, Paruchuri, Idson, & Higgins, 2002). Two judges who were blind to the experimental conditions coded the degree to which attributes listed for the actual self matched those listed for the ideal self and those listed for the ought self (interjudge agreement = 88%, disagreements resolved with a third judge). Two scores were tabulated for each participant: an ideal-actual match score, which reflects the degree of promotion, and an ought-actual match score, which reflects the degree of prevention. Consistent with previous research (Forster, Higgins, & Strack, 2000; Forster, Higgins, & Werth, 2004), to capture the dominance of one regulatory orientation over the other, participants' *relative* regulatory focus was assessed by subtracting their prevention score from their promotion score. Thus, higher scores indicate a relatively greater promotion focus and lower scores a relatively greater prevention focus.[1]

Results

Preliminary Analyses. To verify the assumption that participants' affective and cognitive ratings of the contestants captured distinct types of inputs, these ratings were submitted to a factor analysis with Varimax rotation. As expected, the analysis uncovered two significant dimensions, with all cognitive ratings items loading primarily onto the first dimension (which accounted for 46% of the variance), and all affective ratings items loading onto the second dimension

[1] One could alternatively treat the ideal-actual and ought-actual match scores as separate measures of chronic promotion and chronic prevention, respectively, and examine their effects separately (see Brockner et al., 2000; Pham and Avnet, 2004). We elected to combine them into a single relative measure for greater ease of exposition because the two scores were strongly correlated (r = .71). The results were essentially the same when chronic promotion and chronic prevention were examined separately. In a similar regression analysis of participants' overall evaluations of the constestants using chronic promotion and chronic prevention scores as separate predictors, along with their interactions with affective and cognitive ratings of the contestants, participants' chronic promotion scores interacted positively with their affective ratings of the contestants (β = 0.07, t = 2.15, p = .033) and negatively with their cognitive ratings of the contestants (β = -0.07, t = -2.46, p = .015); in contrast, participants' chronic prevention scores interacted negatively with their affective ratings of the contestants (β = -0.10, t = -2.60, p = .010) and positively with their cognitive ratings of the contestants (β = 0.11, t = 2.95, p = .003).

(which accounted for 13% of the variance).[2] The fact that items such as "charming," "friendly," "exciting," "physically attractive," and "cheerful" all loaded on the same factor is consistent with the assumption that these items tapped into a primary affective dimension of attitudes toward the target. Similarly, the fact that items such as "responsible," "honest," "competent," "intelligent," and "hard-working" all loaded onto another factor is consistent with the assumption that these items tapped into a more cognitive dimension of attitudes toward the target.

Opinions of Contestants. Opinions of the contestants were analyzed across participants and contestants, resulting in a total of 322 observations. To account for the mixed nature of the data, a random-coefficient regression model was used with participant-specific intercepts and dummy variables controlling for the effects of targets. In addition to these intercepts and dummy variables, the analysis had the following predictors: (a) participants' affective assessment of the contestant; (b) participants' cognitive assessment of the contestant; (c) participants' relative level of regulatory focus (promotion – prevention); (d) the interaction between (a) and (c); (e) the interaction between (b) and (c); and (f) the interaction between (a) and (b). Note that predictors (a) through (c) were mean-centered. As would be expected, the analysis revealed main effects of affective assessments ($\beta = 0.59$, $t = 8.72$, $p < .0001$) and cognitive assessments ($\beta = 0.44$, $t = 7.00$, $p < .0001$), indicating that both types of inputs influenced participants' opinions of the contestant positively and were presumably found to be relevant. More importantly, the analysis also uncovered two two-way interactions indicating that participants' relative regulatory focus moderated both the influence of affective assessments and the influence of cognitive assessments on overall evaluations of the contestants. As predicted, a positive interaction between affective assessments and relative focus ($\beta = 0.07$, $t = 2.41$, $p = .017$) indicated that these responses were more influential among participants with a relatively greater promotion focus than among participants with a relatively greater prevention focus (see Figure 1A). In addition, a negative interaction between cognitive assessments and relative focus ($\beta = -0.08$, $t = -2.67$, $p = .008$) indicated that these responses were less influential among participants with a relatively greater promotion focus than among participants with a relatively greater prevention focus (see Figure 1B).

Discussion

Consistent with previous research on affect as an evaluation heuristic, affective assessments of the targets influenced participants' evaluations of these targets in an affect-congruent direction over and above cognitive assessments of the targets. However, this effect was not equally true of every participant. As predicted, the influence of affective assessments of the contestants depended on participants' relative regulatory focus. Affective assessments had a more pronounced positive effect on target evaluations among participants with a relatively greater promotion focus than among those with a relatively greater prevention focus. In contrast, cognitive assessments of the targets had more influence on their overall evaluations among participants with a relatively greater prevention focus than among those with a relatively greater promotion focus. In other words, regulatory focus appears to shift the judgment process either toward greater reliance on affective inputs and lesser reliance on cognitive inputs, or toward greater reliance on cognitive inputs and lesser reliance on affective inputs. These results are consistent with the main hypothesis.

These results extend Pham and Avnet's (2004) previous findings in multiple respects. First, they provide additional support for the main hypothesis in a different judgment domain: that of person-impression-formation. Second, they do so with a different type of affective input: affective attributes of a person such as charm, cheerfulness, and excitement (as opposed to the aesthetic appeal of an ad). Third, these results were observed with affective inputs that were not necessarily less relevant (or more peripheral) than cognitive inputs (unlike in the Pham and Avnet [2004] studies, where aesthetic appeal of the ad could be seen as more peripheral than its message content). Finally, the results were obtained in a quasi-field setting using real-life targets (as opposed to artificial stimuli).

Although each participant provided multiple observations across targets, one obvious limitation of this study is that the number of participants was rather low. This limitation should be evaluated in light of some unique advantages that this semi-field study provided (e.g., real-life targets) compared to a more conventional lab study for which participants would have been easier to recruit. Another limitation is that, although this study tested the hypothesis using a type of affective inputs that was different from that of the original Pham and Avnet (2004) studies, these affective inputs could be construed as pertaining to interpersonal attractiveness rather than to affect *per se*. Although we assume that attributes such as "charming," "friendly,"

[2] The cognitive assessment items had loadings ranging from .55 to .87 (mean of .75) on the first factor compared to loadings ranging from .11 to .44 (mean of .24) on the second factor. The affective assessment items had loadings ranging from .63 to .74 (mean of .67) on the second factor compared to loadings ranging from -.03 to .42 (mean of .23) on the first factor.

"exciting," "physically attractive," and "cheerful" tap into a primarily affective component of interpersonal attractiveness (see Berscheid, 1985, Byrne, 1961; Fitness & Strongman, 1991), one could argue that a promotion focus does not increase the reliance on affect in general but the reliance on interpersonal attractiveness in particular. This issue is addressed in the next study.

Study 2

One limitation of the first study is that it operationalized affect through attributes that may be more reflective of the targets' attractiveness than of the subjective affective responses that the targets elicit. One could therefore argue that the effect of regulatory focus is not to moderate the reliance on subjective affect in general, but to moderate the reliance on *attractiveness* in particular. The purpose of the second study was therefore to replicate the finding of greater reliance on affective inputs under relative promotion than under relative prevention, using a more direct manipulation of affect. Participants whose chronic regulatory focus was measured as in Study 1 were asked to evaluate a book based on a synopsis. Unlike in Study 1, participants' subjective affective responses were manipulated by varying their preexisting mood prior to the book evaluation. Because people tend to misattribute feelings from affective states to the objects that they are evaluating (Schwarz & Clore, 1996), varying participants' mood allows a manipulation of their subjective affective responses to the target without changing any information about the target. It was predicted that the effects of participants' mood on their evaluations of the book would be stronger among participants with a relatively greater promotion focus than among participants with a relatively greater prevention focus.

Method

Participants and Design. Participants were 60 undergraduate and graduate students at Columbia University, 34 men and 26 women, who were paid US $10 for their participation. Participants were randomly assigned, between-subjects, to either a positive mood condition or a negative mood condition. In addition to this manipulated factor, participants' relative level of chronic regulatory focus was assessed using the Selves Questionnaire, as in Study 1.

Procedure. Upon arriving at the lab, participants were assigned to separate cubicles and told that they would take part in four supposedly unrelated studies. In the "first" study participants' mood was manipulated using a procedure adapted from Schwarz and Clore (1983). Under the pretense that the researchers were interested in identifying items for a new scale, participants were asked to describe in vivid detail a personal experience that made them feel either "really good" (in the positive mood condition) or "really bad" (in the negative mood condition). The "second" study was an unrelated filler task designed to minimize the chance that participants would associate the mood induction with the main task administered in the "third" study. (The filler task involved reading brief descriptions of political candidates and rating them.) In the "third" study, participants were given a 345-word synopsis of a non-fiction book (along with a copy of its cover) and instructed to "read the book's description carefully and form your own opinion."

After reading the book's description, participants evaluated the book on four 7-point items (e.g., "very good/not good at all," "favorable opinion/unfavorable opinion"; $\alpha = .92$). Next, as a mood manipulation check, participants rated how they were currently feeling on five 7-point items (e.g., "pleasant/unpleasant," "happy/unhappy"; $\alpha = .91$). As a demand check, participants were then asked to guess the purpose of the study. In the "final" study, participants completed the Selves Questionnaire. As in Study 1, two judges who were blind to the experimental conditions coded the degree to which attributes listed for the actual self matched those listed for the ideal self and those listed for the ought self (interjudge agreement = 84%, disagreements resolved with a third judge). Again, participants' *relative* regulatory focus was assessed by subtracting their prevention (ought-actual attributes match) scores from their promotion (ideal-actual attributes match) scores.

Results

Demand and Manipulation Checks. None of the participants guessed the true purpose of the study. Participants' feelings were more pleasant in the positive mood condition ($M = 5.23$) than in the negative mood condition ($M = 4.23$, $F(1, 54) = 9.04$, $p = .004$), as expected.

Evaluations. Evaluations of the book were submitted to a multiple regression with three predictors: (a) a contrast-code for participants' mood (positive +1, negative -1); (b) the mean-centered level of relative regulatory focus (promotion – prevention); and (c) the interaction between (a) and (b). The analysis revealed a marginally significant main effect of mood: participants in a positive mood evaluated the book more favorably ($M = 5.50$) than participants in a negative mood ($M = 4.88$; $t = 1.93$, $p < .06$). There was no main effect of regulatory focus ($t = 1.39$, $p = .17$). More importantly, there was a positive interaction between mood and relative level of promotion versus prevention ($\beta = 0.29$, $t = 2.59$, $p < .02$). As illustrated in

Figure 2, mood had a stronger positive influence on evaluations of the book among participants with a relatively greater promotion focus than among participants with a relatively greater prevention focus.[3]

Discussion

Using a more direct manipulation of subjective affect, this study closely replicates Study 1's finding that the weight of affective inputs increases under relative promotion compared to relative prevention. As expected, participants' mood had a more pronounced mood-congruent effect on their evaluations among those with a relatively greater promotion focus than among those with a relatively greater prevention focus. These findings reinforce the argument that it is the reliance on affect *itself* that regulatory focus moderates, not just the reliance on attractiveness-related attributes.

In summary, the first two studies converge in showing that promotion increases the reliance on affective inputs in judgments, whereas prevention decreases it. The next study examines a boundary condition of this seemingly robust phenomenon, thereby clarifying the underlying cause of the greater reliance on affective inputs under promotion than under prevention.

Study 3

It thus appears that, compared to a prevention focus, a promotion focus increases the judgmental influence of a variety of affective inputs: affective attributes of a person (Study 1), mood states (Study 2), and ad aesthetic (Pham & Avnet, 2004). However, one could argue that these findings do not necessarily indicate that promotion (compared to prevention) increases the reliance on affect, *specifically,* as a heuristic. Instead, they may indicate that promotion (compared to prevention) simply increases the reliance on peripheral cues, regardless of whether these cues are affective (e.g., background music) or nonaffective (e.g., source credibility). We conjecture, however, that promotion does not increase the reliance on *every* input that could be construed as "peripheral." Rather, it increases the reliance on inputs that are more affective and experiential in nature. We additionally conjecture that the increased reliance on affective inputs under promotion occurs because they are perceived to be more diagnostic under promotion than under prevention. To test these propositions, the perceived relevance of subjective affective responses to the target was manipulated. If promotion increases the reliance on subjective affective responses because promotion-focused individuals perceive these responses to be informative, the phenomenon should depend on the perceived relevance of these affective responses. On the other hand, if promotion increases the reliance on subjective affective responses simply because they are peripheral, the phenomenon should hold regardless of the perceived relevance of the affective responses. In addition to testing these competing interpretations, a secondary purpose of this study was to replicate the first two studies' main findings using an experimental priming manipulation of regulatory focus, as opposed to an individual difference measure, thereby addressing the inherent shortcomings of the latter approach.

Participants whose regulatory focus was *manipulated,* rather than measured, were asked to evaluate whether they would recommend that their best friend meet a target person whose description was manipulated in terms of the affective responses elicited. In addition, the perceived relevance of these affective responses was manipulated by varying the motive underlying the recommendation. Previous research (Pham, 1998; Yeung & Wyer, 2004) has shown that affective responses are perceived to be more relevant when decisions are guided by experiential motives (e.g., choosing a novel to read on a vacation) than when they are guided by instrumental motives (e.g., comparing different tax preparation manuals). Building on these previous findings, in one condition, the potential meeting between the friend and the target was framed in experiential terms (as a date), making subjective affective responses to the target highly relevant. In the other condition, the potential meeting was framed in instrumental terms (as an opportunity to gather information for a term paper), making subjective affective responses to the target less relevant. Based on the first two studies' findings, it was predicted that participants' affective responses to the target would exert more influence on their recommendations in the promotion focus condition than in the prevention focus condition. The more critical question, however, was whether this effect would be moderated by the perceived relevance of the affective responses. According to our proposed explanation, the effect would be more pronounced when the affective responses are more relevant than when they are less relevant. According to a pure peripheral-cue explanation, the effect should be similar

[3] When chronic promotion and chronic prevention scores were examined separately, the results were again essentially the same. Participants' moods interacted positively with their chronic promotion scores ($\beta = 0.27$, $t = 2.29$, $p = .026$) and negatively with their chronic prevention scores ($\beta = -0.26$, $t = -1.98$, $p = .052$) in predicting participants evaluations of the product.

regardless of the perceived relevance of the affective responses.[4]

Method

Participants and Design. Participants were 96 undergraduate and graduate students at Columbia University, 79 men and 17 women, who received $10 for their participation. They were randomly assigned to the conditions of a 2 (pleasant vs. less pleasant target affect) × 2 (promotion vs. prevention focus) × 2 (high vs. low affect relevance) between-subjects design.

Procedure. Upon arriving at the lab, participants were assigned to separate cubicles and told that they would take part in two supposedly unrelated studies. The "first" study served as a guise for the manipulation of participants' regulatory focus. Previous research has shown that the priming of people's ideals (hope, wishes, and aspirations) activates a promotion focus, whereas the priming of people's oughts (duties, responsibilities, and obligations) activates a prevention focus (Higgins et al., 1994; Liberman, Idson, Camacho, & Higgins, 1999). Therefore, consistent with the procedure used by Pham and Avnet (2004), in the promotion-focus condition participants' ideals were primed by asking them to think about and list two past and two current hopes, aspirations, and dreams. In the prevention-focus condition, participants' oughts were primed by asking them to think about and list two past and two current duties, obligations, and responsibilities.

The "second" study was described as an impression formation study and was based on stimuli previously developed and tested by Pham, Meyvis, and Zhou (2001). Participants were asked to read an approximately 400-word newspaper article about the target person, who was referred to as a young woman named Melissa for male participants or as a young man named Matthew for female participants. The article described an interview meeting between the author of the article and the target: a student at the University of Florida in Gainesville who served on the city's traffic management committee. The overall structure of the article was the same across conditions. Across conditions, the target was described as a very good student who had many friends and was polite and friendly. However, several sentences were varied to manipulate how affectively pleasant or unpleasant the target was. In one condition, the target was made more affectively pleasant by describing him (her) as energetic, charming, and having a contagious sense of humor. In the other condition, the target was made less affectively pleasant by describing him (her) as a late riser who was unkempt and lived in a filthy apartment. Based on Pham et al. (2001)'s previous findings, the affect manipulation was expected to influence participants' affective responses to the target without changing participants' perceptions of how competent the target was.

The perceived relevance of participants' affective responses to the target was manipulated by varying their motives for reading the article and evaluating the target. In the high-affect-relevance condition, participants were given an experiential motive. They were told to imagine that the target had expressed a romantic interest in their best friend (whose gender matched the participant's) who was also a student at the University of Florida. They were asked to read the article to evaluate the target as a potential date for their friend. In the low-affect-relevance condition, participants were given an instrumental motive. They were told to imagine instead that their best friend needed to write a term paper on public policies designed by committees. They were asked to read the article to evaluate whether the target would be able to help their friend with the term paper.

The main dependent variable was participants' recommendation of whether their friend should meet the target, which was measured by three 7-point items anchored at "not a good idea/very good idea," "my friend would like it/ not like it," and "I would never/definitely recommend him/her" (α = .89). Then, as a confounding check, participants rated their involvement with the task on two 7-point items (e.g., "I took extra care in forming a sound opinion of [target]"; α = .85). Next, as a manipulation check, participants rated their subjective affective responses to the target on six 7-point items (e.g., "not pleasant/very pleasant," "does not have a good sense of humor/has a good sense of humor," "not physically attractive/very attractive physically"; α = .85). As a confounding check, they also rated the target in terms of perceived competence on five 7-point items (e.g., "not a good student/very good student," "not knowledgeable/very knowledgeable," "not a hard worker/very hard worker"; α = .76). Next, as a check for the manipulation of perceived affect relevance, participants rated the importance of 11 criteria for evaluating the target, six related to subjective affective responses (e.g., "How pleasant [the target] is"; α = .90) and five related to competence (e.g., "How intelligent [the target] is"; α = .73). These importance ratings were collected on 7-point scales, and affective and competence-related criteria were intermixed. Finally, participants were asked to guess the true purpose of the study and provide background information.

[4] One could even argue that a pure peripheral-cue explanation would predict that the phenomenon should be stronger when affective responses are less relevant than when they are more relevant.

Results

Preliminary Analyses. None of the participants guessed the hypothesis of the study, and involvement with the evaluation task did not differ significantly across conditions.[5] To verify that the affect manipulation did operationalize different levels of subjective affective responses toward the target, we performed the following analyses. Participants' six ratings of subjective affect toward the target and five ratings of perceived competence were submitted to a factor analysis with Varimax rotation. As expected, the analysis uncovered two significant dimensions: all subjective affect items loading on the first dimension (which accounted for 33% of the variance), and all competence items loading on the second dimension (which accounted for 23% of the variance).[6] The fact that items such as "pleasant," "good sense of humor," and "physically attractive" all loaded on the same factor is consistent with the assumption that these items tapped into a primarily affective dimension of attitude toward the target. Similarly, the fact that items such as "good student," "knowledgeable," and "hard-working" all loaded onto another factor is consistent with the assumption that these items tapped into a more cognitive dimension of attitude toward the target. The affective items were thus averaged into a single measure of subjective affect toward the target, and the competence items were combined into a single measure of competence. As expected, subjective affective responses to the target were more pleasant in the pleasant-affect condition (M = 5.73) than in the less-pleasant-affect condition (M = 4.80; $F(1, 88) = 29.19$, $p < .0001$). However, perceived competence of the target did not differ across target affect conditions ($F(1,88) = 1.18$, $p = .28$).[7] Also as expected, the perceived relevance of affective responses to the target was greater in the high-affect-relevance (date) condition (M = 5.87) than in the low-affect-relevance (term paper) condition (M = 3.55; $F(1, 88) = 176.68$, $p < .0001$), whereas the perceived relevance of competence considerations about the target was greater in the low-affect-relevance (term paper) condition (M = 5.19) than in the high-affect-relevance (date) condition (M = 4.66; $F(1, 88) = 7.77$, $p < .01$).

Recommendations. Participants' recommendations were submitted to a 2 (regulatory focus) × 2 (target affect) × 2 (affect relevance) ANOVA. (Gender did not moderate the results.) A main effect of target affect indicated that recommendations were more favorable in the pleasant-affect condition (M = 5.70) than in the less-pleasant-affect condition (M = 4.65; $F(1, 88) = 23.66$, $p < .0001$), as could be expected. A target affect × affect relevance interaction also emerged ($F(1, 88) = 8.27$, $p = .005$). Consistent with previous findings (e.g., Pham, 1998; Yeung & Wyer, 2004), the simple effect of target affect was stronger in the high-affect-relevance (date) condition (M_{Pleasant} = 5.88 vs. $M_{\text{Less pleasant}}$ = 4.17; $F(1, 88) = 27.11$, $p < .0001$) than in the low-affect-relevance (term paper) condition (M_{Pleasant} = 5.53 vs. $M_{\text{Less pleasant}}$ = 5.09; $F(1, 88) = 2.02$, $p = .159$). More importantly, as illustrated in Figure 4, there was a three-way interaction among target affect, perceived affect relevance, and regulatory focus ($F(1, 88) = 4.81$, $p = .031$). When affect was clearly relevant (in the date condition), the influence of affective responses to target was again moderated by participants' regulatory focus ($F(1, 88) = 6.51$, $p = .013$). Consistent with the previous studies' findings, the simple-simple effect of target affect was stronger in the promotion-focus condition (M_{Pleasant} = 5.94 vs. $M_{\text{Less pleasant}}$ = 3.39; $F(1, 88) = 31.06$, $p < .0001$) than in the prevention-focus condition (M_{Pleasant} = 5.81 vs. $M_{\text{Less pleasant}}$ = 4.89; $F(1, 88) = 4.20$, $p = .043$). In contrast, when affect was less relevant (in the term paper condition), the influence of affective responses to target was insignificant ($F(1, 88) = 2.02$, $p = .159$) and did not depend on regulatory focus ($F < 1$). Therefore, a relative promotion focus increases the reliance on affective responses to the target, but only when these responses are perceived to be relevant for the judgment at hand.

Discussion

This study replicates once more the basic finding that the influence of subjective affective responses to the target is more pronounced among individuals who are relatively more promotion-focused than among individuals who are relatively more prevention-focused. Unlike in Studies 1 and 2, this finding was observed using a *state* manipulation of regulatory focus, as opposed to an individual difference measure. More importantly, this study sheds some light on the boundary conditions of this phenomenon, thereby clarifying the nature of the underlying process. Specifically, it was found that promotion-focused participants were significantly more influenced by the

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[5] The only effect that approached significance was an affect × regulatory-focus interaction ($F(1, 88) = 3.20$, $p = .077$). However, additional analyses indicate that this effect does not account for the main results.

[6] The affective items had loadings ranging from .65 to .83 (mean of .75) on the first factor compared to loadings ranging from -.14 to .16 (mean absolute loading of .10) on the second factor. The competence items had loadings ranging from .60 to .78 (mean of .72) on the second factor compared to loadings ranging from .-12 to .24 (mean absolute loading of .10) on the first factor.

[7] The target was also perceived to be slightly more competent in the high-affect-relevance condition (M = 5.77) than in the low-affect-relevance condition (M = 5.40; $F(1, 88) = 5.35$, $p = 0.023$). No other effect was significant.

affective pleasantness of the target when it was relevant (in the date condition) than when it was less relevant (in the term paper condition). This contingency suggests that the greater reliance on subjective affective responses under promotion is not mindless, but governed in part by the perceived diagnosticity of these subjective affective responses. Along the same line, it additionally suggests that the greater reliance on subjective affective responses under promotion should not be interpreted as a greater reliance on peripheral information *per se*. Indeed, if the effect of promotion was to increase the reliance on peripheral information *per se*, promotion (compared to prevention) should have increased the influence of affective responses to the target *both* when they were highly relevant and when they were less relevant. It therefore appears that the reliance on subjective affective responses under promotion is not an automatic process, but instead an inferential process similar to the affect-as-information process (Schwarz & Clore, 1996).

Study 4

Although the first three studies provide consistent evidence that people rely more on their subjective affective responses as a heuristic under a promotion focus than under a prevention focus, these studies document only one facet of the greater reliance on affect under promotion, that is, the greater weighting of subjective affective responses in judgments of the target. The purpose of this fourth study was to document a different facet of this reliance on affect, thereby providing converging support for the hypothesis that, under promotion, the overall affective system of evaluation is more engaged than under prevention.

A number of studies have shown that valuation judgments based on affect tend to be more insensitive to the quantitative "scope" or magnitude of the evaluated stimulus than valuation judgments based on cognitive computational processes (Dunn & Ashton-James, 2008; Hsee & Rottenstreich, 2004). For example, in one study (Hsee & Rottenstreich, 2004), respondents were asked how much they would be willing to donate to save either one or four pandas. When the number of pandas to be saved was represented in an affectively-rich fashion, donations in the four-pandas condition were not different from those in the one-panda condition, suggesting that affect-based valuations tend to be scope-insensitive. In contrast, when the number of pandas saved was represented in a cold, nonaffective fashion, donations were significantly higher in the four-panda condition than in the one-panda condition, suggesting that cognitive, computational evaluations are more scope-sensitive. According to Hsee and Rottenstreich (2004), this phenomenon arises because affect-based evaluations are more likely to be based on mental images of the target (see also Pham, 1998)—images that tend to involve discrete prototypical representations of the target but not continuous quantitative information (see also Kahneman, Ritov, & Schkade, 1999).

If (a) compared to a prevention focus, a promotion focus triggers greater reliance on affect as a heuristic, and if (b) compared to cognitive valuations, affective valuations are more scope-insensitive, then (c) compared to a prevention focus, a promotion-focus should trigger more scope-insensitivity in valuations. In this study, participants whose regulatory focus was again manipulated (rather than measured) were asked to estimate how much they would be willing to donate to save either one or four endangered pandas. It was predicted that whereas prevention-focused participants would be sensitive to the number of pandas to be saved in their valuations, promotion-focused participants would tend to be insensitive to this number. This is because promotion-focused participants' valuations would tend to be guided by subjective affective responses to concrete prototypical images of the pandas, and therefore less affected by the number of pandas in question.

Method

Participants and Design. One hundred and eight Columbia University students and junior employees of a New York-based firm (58 men and 50 women) were randomly assigned to one of four conditions of a 2 (regulatory focus: promotion vs. prevention) × 2 (scope: one vs. four pandas) between-subjects design.

Procedure. Upon arriving at the session, participants were told that they would take part in three supposedly unrelated studies. The "first" study served as a guise for the manipulation of participants' regulatory focus. Again, participants' ideals or oughts were primed by asking them to describe either (a) their hopes, aspirations, and dreams or (b) their duties, obligations, and responsibilities. Participants were then asked to continue to the "second" study: a 5-minute unrelated filler task (involving reactions to a foreign policy article), which was meant to separate the regulatory-focus manipulation from the main evaluation task. The main task was administered in the "third" study, which was allegedly about people's opinions about environmental issues. The stimuli were based on the "affect-rich" conditions of Hsee and Rottenstreich (2004). Participants were asked to imagine that a team of zoology students had discovered a number of pandas (either one or four) in a remote Asian region; the team was soliciting donations to

rescue these pandas. To manipulate the magnitude or scope of the target, in one condition participants were told that one panda had been found and needed to be saved and shown a single picture of a cute panda; in the other condition participants were told that four pandas had been found and needed to be saved and shown four identical pictures of a cute panda. As the main dependent variable, participants were asked to assess "What is the maximum amount of money that you would be willing to donate to save these pandas" and report this number in an open-ended fashion. As a confounding check, task involvement was assessed on three 7-point items (e.g., "I read the panda-saving scenario very carefully"; α = .80). Participants were also asked to guess the purpose of the study and to provide background information.

Results

Preliminary Analyses. None of the participants guessed the hypothesis of the study. In addition, task involvement did not differ significantly across conditions (p's > .13).

Donations. Participants' donations were submitted to a 2 (regulatory focus) × 2 (scope) ANOVA, with type of participants (students or employees) as a blocking factor. There was a predictable main effect of participant type indicating that the employees were willing to donate more (M = \$43.53) than the students (M = \$25.23; $F(1, 100) = 5.20$, p = .025). More importantly, there was a regulatory-focus-by-scope interaction ($F(1, 100) = 3.74$, p = .056; see Figure 4). As predicted, the number of pandas to be saved had a stronger influence on donations among participants who were prevention-focused ($M_{1\ panda}$ = \$15.96 vs. $M_{4\ pandas}$ = \$40.89; $F(1, 100) = 5.41$, p = .022) than among participants who were promotion-focused ($M_{1\ panda}$ = \$32.81 vs. $M_{4\ pandas}$ = \$31.83; F < 1). Therefore, compared to a prevention focus, a promotion focus triggers greater scope-insensitivity.

Discussion

Using a completely different paradigm, this study provides additional support for the hypothesis that, compared to a prevention focus, a promotion focus triggers greater reliance on the affect heuristic. The study does so by testing a nomological implication of this hypothesis: If (a), compared to a prevention focus, a promotion focus triggers greater reliance on affect as a heuristic, and if (b), compared to cognitive valuations, affective valuations are more scope-insensitive (Dunn & Ashton-James, 2008; Hsee & Rottenstreich, 2004), then (c), compared to a prevention focus, a promotion-focus should result in more scope-insensitivity. This is indeed what was found in this study. In assessing their donations, participants who were made prevention-focused by priming their oughts were significantly more sensitive to the number of pandas to be saved than participants who were made promotion-focused by priming their ideals. This is presumably because participants who were in a promotion focus based their donations on their feelings-based responses to mental images of the pandas—images that tended to be prototype-based and hence did not include quantitative scope information (Hsee & Rottenstreich, 2004).

General Discussion

There is considerable evidence that judgments and decisions are often based on an affect heuristic and that this heuristic represents a qualitatively distinct mode of judgment and decision making. However, we know surprisingly little about what makes people more likely to rely on this heuristic to begin with. Building on recent findings by Pham and Avnet (2004), this research shows that an important determinant of the reliance on affect as a heuristic is the judge's or decision-maker's regulatory focus. Subjective affective responses are more likely to be relied on under a promotion focus than under a prevention focus, whether this relative regulatory focus is chronic or situationally determined. Two types of evidence consistent with this general hypothesis were observed in this research.

The first type of evidence pertains to the weighting of affective inputs in judgments across types of regulatory focus. Results from Studies 1 through 3 show that affective inputs are weighted more heavily under a promotion focus than under a prevention focus. This phenomenon was observed in a variety of judgment contexts: person-impression formation (Study 1), product evaluations (Study 2), and social recommendations (Study 3). It was also observed with two types of affective inputs: affective trait attributes of a person (Studies 1 and 3) and incidental moods (Study 2). Finally, the phenomenon was observed with an individual measure of chronic promotion or prevention (Studies 1 and 2) as well as with an experimental priming manipulation of promotion or prevention (Study 3).

The second type of evidence was more indirect and capitalized on a characteristic property of affect-based valuations. Prior research has shown that, compared to cognitive evaluations of a target, affect-based evaluations of the same target tend to be more scope-insensitive. If, compared to a prevention focus, a promotion focus triggers greater reliance on affect as a heuristic, one would predict based on this result that valuations performed under a promotion focus would be more scope-insensitive than valuations performed

under a prevention focus. This prediction was indeed supported in Study 4 using an established scope-sensitivity paradigm (Hsee & Rottenstreich, 2004) combined with an established priming manipulation of regulatory focus (Higgins et al., 1994; Liberman et al., 1999). The fact that regulatory focus modulates two manifestations of the affect heuristic that are so different from one another (the weighting of affective inputs versus scope-insensitivity) suggests that the entire affective system of judgment is indeed more engaged under promotion than under prevention.

The findings additionally suggest that the greater reliance on affect as a heuristic under relative promotion should not be mistaken for an increased reliance on *any* cue that is peripheral, whether affective (e.g., background music) or nonaffective (e.g., source credibility). It was found in Study 3 that a promotion focus increased the reliance on affect toward the target more when this affect was very relevant for the judgment to be made than when it was less relevant. This contingency suggests that the greater reliance on subjective affective responses under promotion is not mindless, but governed in part by the perceived diagnosticity of these subjective affective responses. Therefore, the greater reliance on subjective affective responses under promotion is not a reliance on peripheral information *per se*. For example, we do not believe that promotion would necessarily increase the reliance on nonaffective peripheral cues such as source credibility. Rather, we suspect that promotion increases primarily the reliance on inputs that are more experiential such as affective feelings (this research) and possibly nonaffective feelings such as ease-of-retrieval or perceptual fluency experiences. This speculation deserves future research.

This research thus contributes beyond Pham and Avnet's (2004) previous findings in multiple respects. First, it shows that the greater weighting of affective inputs under promotion (compared to prevention) is not limited to persuasion settings and extends to a wide range of judgment tasks, including tasks in which affective inputs are not necessarily less diagnostic. Second, it shows that the phenomenon is not limited to aesthetic appeal but applies to a wide range of affective inputs, including affective trait attributes and incidental moods. Third, it shows that the greater reliance on affective inputs under promotion is dictated in part by the perceived diagnosticity of these inputs. Finally, it shows that the greater reliance on the affect heuristic under promotion is not limited to the greater weighting of affective inputs: it also applies to distinctive correlates of this reliance such as scope-insensitivity.

Two of the studies in this paper (Studies 1 and 3) operationalized the reliance on affective inputs through the weight attached to personal trait attributes such as physical attractiveness, cheerfulness, friendliness, and sense of humor. One could therefore argue that the effect of promotion (compared to prevention) is not to increase the reliance on affect *per se,* but the reliance on attractiveness-related information. Although this possibility cannot be ruled out, several lines of argument seem to suggest that it is affective information in general, not just attractiveness-related information in particular, that is weighted more heavily under promotion than under prevention. First, factor analyses in Studies 1 and 3 suggest that the attribute dimensions considered "affective" in these two studies (a) were distinct from other attribute dimensions such as "hard-working" and "knowledgeable," and (b) had a greater affective quality. This is consistent with findings suggesting that interpersonal attitudes—and attitudes in general—have both affective and cognitive components (Batra & Ahtola, 1991; Breckler, 1984; Breckler & Wiggins, 1989; Cuddy et al., 2008). Second, converging effects were obtained in Study 4 using a known property of affect-based valuation that cannot be construed in terms of attractiveness. Most importantly, parallel affect-weighting effects were obtained in Study 2 using incidental moods, an unambiguous manipulation of subjective affect.

Considering the accumulated evidence that, compared to prevention, promotion increases the reliance on affect as a heuristic, it would be tempting to additionally conclude that promotion also decreases the reliance on cognitive computational processes. There is indeed partial evidence that this might be the case. For example, in Study 1 it was found that a relative promotion focus not only increased the influence of affective attributes on overall judgments of the target, it also decreased the influenced of cognitive attributes. Similarly, Pham and Avnet (2004) observed that a relative promotion focus not only increased the influence of an ad's aesthetic on persuasion, it also decreased the influence of the ad's substantive claims. Still, the present studies were not specifically designed to assess the influence of computational processes of judgment under promotion versus prevention; they were designed to assess only the relative influence of affective processes. At this point, conclusions about the effects of regulatory focus on the reliance on cognitive computational processes in judgment would be premature and await future research.

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Figure Captions:

Figure 1A. Contestant Evaluations as a Function of Affective Assessment and Regulatory Focus

Figure 1B. Contestant Evaluations as a Function of Cognitive Assessment and Regulatory Focus

Figure 2. Book Evaluations as a Function of Mood and Regulatory Focus

Figure 3. Recommendations as a Function of Target Affect, Perceived Affect Relevance, and Regulatory Focus

Figure 4. Donations as a Function of Number of Pandas and Regulatory Focus