

# Promotion and Prevention Choices Between Stability and Change

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Two situations involving choice between stability and change were examined: task substitution, which deals with choosing between resuming an interrupted activity and doing a substitute activity, and endowment, which deals with choosing between a possessed object and an alternative object. Regulatory focus theory (E. T. Higgins, 1997, 1998) predicts that a promotion focus will be associated with openness to change, whereas a prevention focus will be associated with a preference for stability. Five studies confirmed this prediction with both situational induction of and chronic personality differences in regulatory focus. In Studies 1 and 2, individuals in a prevention focus were more inclined than individuals in a promotion focus to resume an interrupted task rather than do a substitute task. In Studies 3–5, individuals in a prevention focus, but not individuals in a promotion focus, exhibited a reluctance to exchange currently possessed objects (i.e., endowment) or previously possessed objects.

People often face decisions between stability and change. They might need to decide whether to continue a current course of action or undertake a different action or to decide whether to keep an object they have or exchange it for another one. The present article examines decisions between stability and change from the perspective of regulatory focus theory (Higgins, 1997, 1998). We address two classic situations of choice between stability and change that have been discussed in the literature and suggest that distinguishing between a promotion and a prevention focus on regulating one's choices explains preferences for stability versus change in these situations.

We first briefly review the literature on task substitution that deals with decisions about changing an existing course of action (Henle, 1944; Lewin, 1935; Wicklund & Gollwitzer, 1982; Zeigarnik, 1927) and the literature on the endowment effect that deals with decisions about changing objects in one's possession. Because research on task substitution and research on the endowment effect have not been considered in terms of the general issue of choosing between stability and change, they have remained distinct lines of research. We then consider how regulatory focus might influence choices between stability and change in these situations. From the perspective of regulatory focus theory, the literature on task substitution and the literature on endowment address comparable situations of choosing between stability and change, and both phenomena should vary as a function of regulatory focus.

## Task Substitution

According to field theory (Lewin, 1935, 1951), setting a goal (e.g., to mail a letter) creates a state of tension that persists until the goal is fulfilled (one mails the letter), is substituted (e.g., one has someone else mail the letter), or becomes irrelevant (e.g., the addressee unexpectedly comes to visit). Interrupting a task before completion leaves the system in tension and creates a tendency to resume the interrupted task (Henle, 1944; Lissner, 1933), enhances its attractiveness (Cartwright, 1942), and enhances memory for the interrupted task relative to completed tasks (Zeigarnik, 1927). Theoretically, these effects should increase as the motivation to perform the interrupted task increases (Lewin, 1935, 1951). Consistent with this prediction, Atkinson (1953) found that instructions that enhanced involvement in the task yielded better memory for the interrupted tasks (see also Henle, 1944; Marrow, 1938). Also consistent with this idea is the finding that highly motivated participants remember incomplete tasks better than less motivated participants (Atkinson, 1953; Weiner, 1965; Zeigarnik, 1927).

If people are asked to perform a different, substitute task after interruption, the motivation to resume the original task can be reduced; that is, completing a new task can substitute for the original interrupted task. Theoretically, the substitute value of a new task derives from its ability to attain the goal of the original, interrupted task (Atkinson, 1964; Heckhausen, 1991; Kruglanski, 1996; Lewin, 1935; Martin, Tesser, & Cornell, 1996; Wicklund & Gollwitzer, 1982). Substitute value increases with similarity to the original task, and the crucial aspect of similarity is supportiveness of the original task's goal rather than surface similarity. For example, if participants are asked to do something for a certain person, then doing the same thing for another person has little substitute value (Adler & Kuonin, 1939). Likewise, performing an activity that is similar to the original one but has a different identifying label has little substitute value (Lissner, 1933).

In summary, the literature on task interruption has shown that the tendency to resume an interrupted task increases as the motivation to perform the task increases and decreases if a substitute task is performed that achieves the goal of the original interrupted task. Notably, in the original task interruption paradigm, interrup-

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tion did not signify failure but, rather, presented a temporary obstacle or delay on the way to goal achievement (but see, for example, Atkinson, 1953, and Caron & Wallach, 1957, for a modification of the paradigm in which interruption signified failure). It was not the case that people perceived that their old course of action was inefficient and sought out an alternative way to achieve the goal. Rather, a situation arose in which an alternative (i.e., a substitute) was presented, and participants had to decide whether to take it or not.

### The Endowment Effect

The endowment effect is the reluctance to exchange objects in one's possession for either money or other objects of comparable dollar value (Kahneman, Knetsch, & Thaler, 1990, 1991; Thaler, 1980). In a typical demonstration of the endowment effect (Knetsch, 1989), one group of participants is given one object (e.g., a coffee mug) and another group of participants is given a different object of comparable dollar value (e.g., a candy bar). A third group is given a choice between the two objects. Participants in the first two groups are then given an opportunity to exchange the object they have for the other object. It is typically found that very few participants exchange objects, whereas preferences with no prior endowment, as shown by the third group, are evenly distributed between the two objects. Thus, once people are endowed with an object, they become reluctant to exchange it even if, before endowment, they might have preferred the alternative object. Reluctance to exchange has also been found with coupons (Sankar & Johnson, 1997) and with lottery tickets (Bar-Hillel & Neter, 1996).

Another example of the endowment effect is the tendency to assign higher selling prices than buying prices for the same product (Kahneman et al., 1990; Knetsch, 1989; van Dijk & van Knippenberg, 1996). There is also a preference for improvement over change, such that people prefer novel features to be added to existing brands rather than features being replaced by new features (Hardie, Johnson, & Fader, 1993; Kahneman et al., 1991). Presumably, this is because people are endowed with existing features and are reluctant to exchange them for alternative features.

The endowment effect has been explained in terms of the general principle of loss aversion, according to which people experience losses more intensely than gains of similar objective magnitude (Kahneman & Tversky, 1979; Tversky & Kahneman, 1994). It is assumed that giving up an object is represented as a loss, whereas receiving another object is represented as a gain. Although the two objects can be of similar dollar value, it is predicted that the pleasant experience of receiving a new object (a gain) cannot compensate for the more intense aversive experience of giving up an object one already has (a loss). Loss aversion, then, leads to a general tendency to prefer one's current possessions and their current features over new alternatives.

Some research has attempted to reveal factors that moderate the endowment effect. It has been shown that endowing people with exchange goods (tokens exchangeable for goods at the end of the experiment) does not produce the usual endowment effect (Kahneman et al., 1990) or produces a smaller effect than endowment with consumption goods (van Dijk & van Knippenberg, 1996). Presumably, this is because transactions involving such exchange goods are represented as a net balance (e.g., a revenue of \$1) rather

than separately as a loss and a gain (Kahneman et al., 1990, p. 1343). Another line of research has demonstrated the importance of the source of ownership. Thus, an object received as a reward for good performance is valued more than the same object obtained by chance or as a compensation for poor performance (Loewenstein & Issacharoff, 1994). The explanation is that association with the positive event of success adds value to the object, whereas association with a negative event of failure diminishes the value of the object.

To summarize, the endowment effect has been explained by the principle of loss aversion. The conditions that have been found to influence the endowment effect may be broadly conceptualized in terms of two variables. The willingness to exchange depends on both the way the transaction is represented (e.g., as a net revenue vs. a loss and a gain) and the personal meaning of the object (e.g., whether it is associated with success or failure). Notably, in the endowment paradigm, it was not the case that people were dissatisfied with the original object they had and sought out an alternative. Rather, as in the task interruption paradigm, a situation arose in which an alternative was presented, and participants had to decide whether to take it or not.

### A Regulatory Focus View of Task Substitution and Endowment

Regulatory focus theory proposes that beyond the general hedonic notion that people approach pleasure and avoid pain, different ways of approaching pleasure (as well as avoiding pain) should be recognized (Higgins, 1997, 1998). The theory concentrates on self-regulation toward desired end states because this is the kind of self-regulation that has been emphasized in the literature (e.g., see Carver & Scheier, 1981, 1990; Gollwitzer & Bargh, 1996; Miller, Galanter, & Pribram, 1960; Pervin, 1989; von Bertalanffy, 1968; cf. Elliot & Church, 1997; Elliot & Harackiewicz, 1996). The theory distinguishes between two major categories of desired goals: those related to advancement and growth and those related to safety and security. It further proposes the existence of distinct regulatory systems that are concerned with acquiring either nurturance or security. Individuals' self-regulation in relation to their hopes and aspirations (ideals) satisfies nurturance needs. The goal is accomplishment, and the regulatory focus is promotion. Individuals' self-regulation in relation to duties and obligations (oughts) satisfies security needs. The goal is safety, and the regulatory focus is prevention.

Individuals can differ in their chronic promotion focus on hopes, aspirations, and accomplishments versus chronic prevention focus on duties, obligations, and safety. Differences in chronic regulatory focus can arise from differences in the quality of parental involvement (see Higgins & Silberman, 1998). A parenting history of protection and using punishment as discipline produces strong "oughts" representing duties and obligations and prevention concerns with safety and security. In contrast, parenting that is characterized by encouraging accomplishments and withdrawing love as discipline produces strong ideals representing hopes and aspirations and promotion concerns with accomplishments and advancements (see Higgins & Silberman, 1998). In addition to varying chronically across individuals, regulatory focus can be induced temporarily in momentary situations. For example, task instructions can be framed to communicate either gain-nongain (promo-

tion focus) or nonloss–loss (prevention focus) information. Another example is that thoughts about hopes and aspirations (ideals) can induce or prime a promotion focus, whereas thoughts about duties and responsibilities (oughts) can induce a prevention focus.

Regulatory focus theory proposes that promotion focus and prevention focus differ in their strategic inclinations for attaining desired end states. Because a promotion focus involves a sensitivity to positive outcomes (their presence and absence), an inclination to approach matches to desired end states is the natural strategy for promotion self-regulation (e.g., pursue all means of advancement). In contrast, because a prevention focus involves a sensitivity to negative outcomes (their absence and presence), an inclination to avoid mismatches to desired end states is the natural strategy for prevention self-regulation (e.g., carefully avoid any mistakes). Higgins, Roney, Crowe, and Hymes (1994), for example, found that participants primed with promotion focus ideals recalled better episodes exemplifying approaching a match to a desired end state (e.g., “Because I wanted to be at school for the beginning of my 8:30 psychology class, which is usually excellent, I woke up early this morning”) than those exemplifying avoiding a mismatch to a desired end state (e.g., “I wanted to take a class in photography at the community center, so I didn’t register for a class in Spanish that was scheduled at the same time”). The reverse was true for participants primed with prevention focus oughts (cf. Higgins & Tykocinski, 1992).

These distinctions of regulatory focus theory can be applied to a signal detection situation, such as deciding whether a stimulus was present or not or deciding whether an action is worth pursuing or not (Tanner & Swets, 1954; Trope & Liberman, 1996). There are four different outcomes in a signal detection trial: (a) a hit (accepting a correct stimulus or deciding to take an action that was the right action), (b) a miss (rejecting a correct stimulus or deciding not to take an action that was the right action), (c) a false alarm (accepting a false stimulus or deciding to take an action that was the wrong action), and (d) a correct rejection (rejecting a false stimulus or deciding not to take an action that was the wrong action). A promotion focus, because it strategically involves approaching matches to a desired end state, should relate to ensuring hits and ensuring against errors of omission or misses (i.e., a loss of an opportunity for accomplishment). In contrast, a prevention focus, because it strategically involves avoiding mismatches to a desired end state, should relate to ensuring correct rejections and ensuring against errors of commission or false alarms (i.e., making a mistake). As a result, a promotion focus should be associated with a risky bias (i.e., a tendency to say yes or to undertake actions), whereas a prevention focus should be associated with a conservative bias (i.e., a tendency to say no or not to undertake actions).

Crowe and Higgins (1997) provided evidence for these predictions in a study on recognition memory. Participants were situationally induced with either a promotion focus or a prevention focus. Specifically, they were told that, depending on their performance on a memory task, they would have an opportunity to perform a liked task (promotion focus) or not to perform a disliked task (prevention focus). Performance on the recognition memory task was then examined. In this task, participants first memorized a series of nonsense syllables and then were presented with the same syllables among distractors that had not appeared in the original list. For each test syllable, they had to indicate whether it

appeared in the original list or not. As predicted, participants in a promotion focus had a risky bias of saying yes (i.e., a relatively large number of hits and false alarms), whereas participants in a prevention focus had a conservative bias of saying no (i.e., a relatively large number of correct rejections and omissions).

How does the logic of regulatory focus apply to the situations involving choice between stability and change that have been described in the literature on task substitution and on endowment? As noted before, in both the task substitution and the endowment literatures, an opportunity for change was presented, but people did not need to change because of dissatisfaction with the original alternative. In this type of situation, the focus is naturally on the new action or object, which created the choice situation, rather than on the old action or object, which remains constant and thus functions as the background or given condition. As a result of the focus on the new alternative, the likely representation of the choice situation is “to take or not to take the new alternative.” For this type of representation, an approach or risky strategy would mean more openness to change, whereas an avoidance or conservative strategy would mean less openness to change. In addition, in both the task interruption and the endowment literatures, the old alternative was satisfactory; the original course of action was not failing, and there was nothing wrong with the object one originally possessed. In both literatures, then, the original alternative is a relatively safe choice. It follows that individuals in a prevention focus, because of their concern with safety and security, should favor stability in these situations. Individuals in a promotion focus, however, should be open to changing a satisfactory original alternative for a new alternative in the pursuit of advancement and gain. Therefore, whenever the original alternative is satisfactory, and the new alternative has a potential to offer an advancement, individuals in a promotion focus are likely to be more open to change than individuals in a prevention focus.

We predict, then, that for the standard situations used in past studies, task substitution will be stronger for individuals in a promotion focus than a prevention focus, and the reluctance to exchange objects (endowment) will be stronger for individuals in a prevention focus than a promotion focus. In both cases, individuals in a promotion focus would be more open to change than individuals in a prevention focus. In our studies, a difference in promotion versus prevention focus was both a chronic personality variable (Studies 2 and 4) and an experimentally manipulated situational variable (Studies 1, 3, and 5). Studies 1 and 2 examined willingness to change one’s course of action (i.e., task substitution), and Studies 3, 4, and 5 examined willingness to exchange objects (i.e., endowment or object substitution).

### Study 1: Task Substitution for a Promotion or Prevention Framed Task

In Study 1, we examined how framing the same activity in promotion versus prevention terms affects the willingness to substitute it for another activity after interruption. Participants performed a communication task in which they had to describe 3 abstract figures so that another person would be able to recognize each figure among 10 abstract figures on the basis of their description (e.g., see Krauss, Vivekananthan, & Weinheimer, 1968). Participants in the promotion focus were told that they would start with no points and receive 2 points for each figure they described

well. Participants in the prevention focus were told that they would start the game with 6 points and would lose 2 points for each figure they did not describe well. All of the participants were interrupted while describing the third figure and could choose to either resume the interrupted description or start describing a new substitute figure. We predicted that participants in the promotion framing condition would be more willing to change to a new figure than participants in the prevention framing condition.

### Method

**Participants.** Eighty-one undergraduate Columbia University students (37 men, and 44 women) were paid participants in the study. There were no differences between male and female participants in any of the results reported subsequently.

**Procedure.** Participants were presented with three numbered cards, with 1 abstract figure on each card. They were instructed to describe the figure on each card, starting with the first card and proceeding at their own pace. They were told that other participants in the experiment were assigned to the "recipient" role and would try to identify the figure among 10 figures on the basis of their descriptions. The participants were randomly assigned to either the promotion or prevention framing condition. Participants in the promotion framing condition were told that they would start with no points and would gain 2 points for each figure they described well (i.e., if another participant recognized the figure on the basis of their description) and would not gain 2 points if they did not describe the figure well. Participants in the prevention framing condition were told that they would start with 6 points and would lose 2 points for each figure they did not describe well (i.e., if another participant did not recognize it on the basis of their description) and would not lose 2 points if they described the figure well.

Participants typed their descriptions into a computer. After they had completed the first two figure descriptions and 50 s after they had started the third figure description, a computer screen appeared and announced that they were being interrupted. They were told that they would resume working on the description after they answered a few questions and completed an unrelated task. The timing of interruption was based on pretesting and was a compromise between a need to interrupt late enough so that people would feel that they had invested some effort in the description and a need to ensure that most participants would not have finished the description before the interruption. After the interruption, the participants were asked what percentage of the figure description they had completed before the interruption. They then worked on a number of unrelated decision-making problems, followed by two questions on task substitution. The first question asked the participants whether they would prefer to continue the description from the point at which they were interrupted or whether they would prefer to start describing a new substitute figure. In the second question, the participants were told that, sometimes, unfinished descriptions were not saved on the computer, in which case if they decided to go back to the interrupted description they would have to start it anew. Participants were then asked whether, in this case, they would prefer to start the interrupted description all over again or would prefer to describe a new figure. Each of these questions presented first either the option to change to a new figure or the option to go back to the old description. Order of options was counterbalanced across participants and had no effect on the results. At the end of the study, all participants were fully debriefed and thanked for taking part.

A number of aspects of our procedure were designed to ensure that participants would not interpret interruption as indicating failure. First, participants were interrupted by a computer program rather than by an experimenter. Second, they were informed that the interruption was temporary and that they would resume the task after a relatively short time. Third, participants knew that the quality of their performance (i.e., how informative another participant would find their description of the figure)

could not be assessed on-line. We believe that this interpretation of interruption as distinct from failure feedback is in line with the classic paradigm (Zeigarnik, 1927).<sup>1</sup>

### Results and Discussion

As mentioned before, the timing of the interruption was based on pretesting and was set to ensure that few participants would complete the figure description before the interruption occurred. Nevertheless, 11 participants (5 in promotion framing and 6 in prevention framing) described the figure in less than 50 s. Because these participants were not interrupted, they were excluded from further analysis. On average, the participants indicated that they were interrupted halfway (about 50%) through the figure description. There was no difference between the promotion and prevention framing conditions in the percentage of the figure that was completed before interruption,  $F < 1$ . There was also no difference between these conditions in how long it took to complete the first two figures (promotion framing:  $M = 158$  s, prevention framing:  $M = 159$  s),  $F < 1$ . These results indicate that the overall motivation to perform the task did not differ between the promotion and prevention framing conditions.

The two task substitution questions were positively correlated,  $r(70) = .59$ ,  $p < .001$ , and thus were combined into a task substitution index that ranged from 0 to 2, with higher scores indicating more willingness to change to a new figure (i.e., substitute the interrupted figure with an alternative figure). As predicted, participants in the promotion framing condition were more likely to indicate that they preferred to change to a new description ( $M = 0.97$ ) than participants in the prevention framing condition ( $M = 0.49$ ),  $F(1, 68) = 5.99$ ,  $p = .02$ . In the promotion framing condition, 42% of the participants indicated that they preferred to start a new figure rather than continue the interrupted one, as compared with only 19% of the participants in the prevention framing condition,  $\chi^2(1, N = 70) = 4.59$ ,  $p = .03$ . In addition, 55% of the participants in the promotion framing condition, as compared with only 30% of the participants in the prevention framing condition, indicated that they preferred to start a new figure rather than to rewrite the interrupted figure description all over again,  $\chi^2(1, N = 70) = 4.43$ ,  $p = .03$ .

### Study 2: Task Substitution for Individuals Varying in Strength of Regulatory Focus

Study 2 used the same task as in Study 1; however, instead of regulatory focus being manipulated, the participants interpreted the

<sup>1</sup> There are two other differences between our study and the original task interruption paradigms. First, unlike in our study, the original studies on task interruption measured actual behavior rather than behavioral intentions. We believe, however, that the behavioral intentions we measured were very close to actual behavior, because they were concrete and proximal in time to the actual behavior. Second, in some of the original studies on task interruption, the substitute activity was offered first, and the original activity was offered second. Furthermore, in these studies it is not clear whether participants knew, at the time of considering the substitute activity or actually performing it, whether or not they would have an opportunity to resume the original task. From our theoretical perspective, this is a crucial aspect of the choice situation; to avoid this ambiguity, we presented the two alternatives together rather than consecutively.

task according to their own chronic focus. As mentioned earlier, regulatory focus theory proposes that individuals differ in their chronic promotion focus on hopes, aspirations, and accomplishments versus chronic prevention focus on duties, obligations, and safety. Inspired by Fazio's research on attitude accessibility (see Fazio, 1986, 1995), Higgins, Shah, and Friedman (1997) measured individual differences in promotion focus strength and prevention focus strength via reaction times to questions about ideal and ought self-guides. Fazio (1986, 1990) has used reaction time to measure attitude accessibility, assuming that the latency required to produce a given attitude is a reflection of its accessibility. This operationalization reasonably assumes that accessibility is activation potential, and stored knowledge with higher activation potentials should produce faster responses to relevant inputs (see Higgins, 1996). Fazio (1986, 1995) has empirically demonstrated the predictive utility of this operationalization, and Bassili (1995, 1996) has provided compelling evidence that the use of reaction times as an implicit measure of attitude predisposition strength is preferable to explicit measures such as ratings of importance (see also Greenwald & Banaji, 1995).

Higgins et al. (1997), then, considered response latencies for the recall of a self-guide to be a measure of the accessibility of the self-guide. Chronically accessible ideal self-guides reflect a stronger promotion focus, and chronically accessible ought self-guides reflect a stronger prevention focus. Studies on emotions, motivation, performance, and decision making have produced strong support for these proposals (see Förster, Higgins, & Idson, 1998; Higgins et al., 1997; Shah & Higgins, 1997; Shah, Higgins, & Friedman, 1998). In the present study, it was predicted that a willingness to change or substitute a new task would increase as strength of promotion focus increased, and would decrease as strength of prevention focus increased.

## Method

**Participants.** Fifty-five undergraduate Columbia University students (34 men, and 21 women) were paid for their participation in a battery study. All participants indicated that English was their native language. There were no differences between male and female participants in any of the results reported subsequently.

**Procedure.** On arrival, participants completed the Self-Guide Strength measure. Like the Selves Questionnaire (see Higgins, Klein, & Strauman, 1985), the Self-Guide Strength measure is an idiographic measure that asks participants to list attributes describing certain self-representations from their own standpoint (see Higgins et al., 1997). Participants were initially provided with a definition of ideal self and ought self. Their ideal self was defined as the type of person they ideally would like to be, the type of person they hoped, wished, or aspired to be. Their ought self was defined as the type of person they believed they ought to be, the type of person they believed it was their duty, obligation, or responsibility to be. They were told that they would be asked to provide attributes that described their ideal and ought selves. The attributes describing the ideal self had to be different from those describing the ought self (unlike the Selves Questionnaire), and all attributes were to be provided as quickly and accurately as possible.

Participants were then asked to list the attributes in a seemingly random order: one ideal attribute followed by two ought attributes, another ideal attribute, another ought attribute, and a final ideal attribute. After listing each of the ideal attributes, participants were asked to rate the extent to which they ideally would like to possess the attribute (ideal extent) and the extent to which they actually possessed the attribute (actual-ideal extent) on a 4-point scale ranging from *slightly* (1) to *extremely* (4). Similarly, after listing each of the ought attributes, they were asked to rate the extent to

which they ought to possess the attribute (ought extent) and the extent to which they actually possessed the attribute (actual-ought extent) on the same 4-point scale.

The computer measure also recorded the time each participant took to produce each attribute and to make the corresponding extent determinations. All reaction time measures were first transformed via a natural logarithmic transformation, because the reaction time distributions were positively skewed (see Fazio, 1990; Judd & McClelland, 1989). Then a total ideal strength assessment and a total ought strength assessment were calculated by summing attribute reaction times and extent reaction times (e.g., ideal extent and actual-ideal extent) across the first three ideal attributes and the first three ought attributes separately.

After completing the Self-Guide Strength measure, participants performed unrelated tasks for about 20 min, after which they were introduced to the same figure description task as in Study 1, with the only difference being that no framing manipulation was introduced. Participants were simply instructed to describe each figure so that another person would be able to recognize it among 10 figures. At the end of the study, all participants were fully debriefed and thanked for taking part.

## Results and Discussion

Participants in this experiment spent less time on each figure description ( $M = 116$  s) than participants in Study 1 ( $M = 158$  s). This was probably because removing the framing manipulation reduced the overall motivation to expend effort on the task. This unanticipated difference between the studies resulted in more participants in Study 2 who completed the figure description before interruption (25 participants). As in Study 1, these participants were excluded from the analysis.

The remaining participants indicated that they were interrupted, on average, after completing 61% of the task. The percentage of the figure description completed as well as the time it took participants to complete the first two figure descriptions was regressed on ideal strength and ought strength in a multiple regression analysis. Ideal strength and ought strength were not related to either the percentage of the figure description completed or the time it took to describe the first two figures (all  $ps > .17$ ). Thus, the overall motivation to perform the task was unrelated to ideal strength or ought strength.

The task substitution index was regressed on ideal strength and ought strength in a multiple regression analysis. Consistent with our predictions, as ideal strength increased (controlling for ought strength), participants' willingness to change tasks increased ( $B = .30, p = .005$ ). In contrast, as ought strength increased (controlling ideal strength), participants' willingness to change tasks decreased ( $B = -.28, p = .008$ ). Thus, as predicted, two independent effects were obtained: Ideal strength increased willingness to change or substitute tasks, and ought strength decreased willingness to change or substitute tasks.<sup>2</sup>

To illustrate this result, we classified participants as predominantly promotion focused or predominantly prevention focused on the basis of a median split of the difference between their ideal strength and ought strength. Of the predominantly promotion focus participants, 60% indicated that they preferred to start a new figure rather than continue the interrupted one, in comparison with only

<sup>2</sup> In view of the large number of dropouts, we conducted another analysis, this time including the participants who completed the figure description. For these participants, the first substitution question was

33% of the predominantly prevention focus participants. In addition, 67% of the predominantly promotion focus participants, in comparison with only 33% of the predominantly prevention focus participants, indicated that they preferred to describe a new figure rather than rewrite the interrupted figure description all over again.

Together, Studies 1 and 2 provide convergent evidence in support of our hypothesis that individuals in a promotion focus are more willing than individuals in a prevention focus to substitute a course of action for an alternative. This was found for both situationally induced promotion and prevention focus (Study 1) and chronic inclinations toward promotion and prevention focus (Study 2). In our studies, as in most studies on task substitution, interrupting the action did not signal failure, nor did the participants themselves decide to stop it and look for alternatives. Rather, an alternative was presented that defined the situation as a choice between approaching the new alternative or not. In this type of situation, promotion focus self-regulation, because it involves an approach or risky strategy, should be associated with more openness to change to the substitute task and with approaching it as a potential advancement. In contrast, prevention focus self-regulation, because it involves an avoidance or conservative strategy, should be associated with less openness to change to the substitute task and with sticking with the already-known, safe alternative instead.

Notably, in neither Study 1 nor Study 2 did regulatory focus affect the overall motivation to perform the task. From the perspective of field theory (Lewin, 1935, 1951), therefore, the differences in willingness to substitute should stem from the goal supportiveness of the substitute task varying as a function of regulatory focus. According to field theory, the substitute task should be more supportive of the goal for a promotion focus than a prevention focus. This possibility is consistent with regulatory focus theory. Each of the different means to achieve a goal of advancement and accomplishment (promotion focus goals) can be considered sufficient, and thus each of them is substitutable for the other. In contrast, each of the different means to achieve a goal of safety and security (prevention focus goals) is considered necessary and therefore not substitutable for the other. Thus, although for all participants the goal was to achieve the maximum number of points, promotion focus participants would represent either of the alternative means for the goal of gaining points to be sufficient and thus would be open to the possibility of choosing the substitute task. Prevention focus participants, on the other hand, would represent each of the alternative means to the goal of not losing points as necessary and thus would want first to complete the original task. Therefore, the substitute task would be perceived as less supportive of the overall goal in a prevention focus than in a promotion focus.

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equivalent to asking whether they would like to add something to the description of the third figure or, rather, go on and do a new one. The second substitution question was equivalent to asking whether they would like to rewrite the third description, starting from scratch, or dump it and do a new one instead. A regression analysis yielded the same pattern as the one just described: a uniquely positive effect of ideal strength ( $B = .18$ ,  $p = .02$ ) and a uniquely negative effect of ought strength ( $B = -.16$ ,  $p = .04$ ). Thus, the predicted effect remained significant when the analysis included the participants who completed the third figure.

The next studies examined decisions about changing versus retaining objects, decisions commonly addressed by the literature on the endowment effect and loss aversion. We examined a hypothesis similar to that of Studies 1 and 2, namely, that individuals in a promotion focus would be more open to change than individuals in a prevention focus, whose preference would be for stability or retaining objects. The endowment effect, then, should be stronger for individuals in a prevention focus than a promotion focus.

### Study 3: Object Substitution After Promotion or Prevention Priming

In this study, participants first described either their hopes and aspirations (promotion priming of ideals) or their sense of duty and obligation (prevention priming of oughts). They then participated in an ostensibly unrelated study in which they decided on whether to keep an object they received for a gift or exchange it for another object of comparable value. We examined whether willingness to exchange would be higher in the promotion priming condition than in the prevention priming condition.

#### Method

*Participants.* Fifty-three undergraduate Columbia University students (32 men, and 21 women) were paid participants in a battery study. All participants indicated that English was their native language. There were no differences between male and female participants in any of the results reported subsequently.

*Procedure.* For the first 30 min of the experiment, participants completed a number of tasks unrelated to the present study. After that, an experimental priming manipulation was used to induce in participants a promotion focus or a prevention focus. The participants were randomly assigned to receive either promotion focus priming or prevention focus priming (see Higgins et al., 1994). Participants in the promotion priming condition were asked to describe their current hopes and goals and how they differed from their hopes and goals as they were growing up. Participants in the prevention priming condition were asked to describe their current sense of duty and obligation and how it differed from their sense of duty and obligation as they were growing up. A blank page was provided, and participants completed this part at their own pace. After this manipulation, participants were introduced to a supposedly unrelated study on decision making. All of the participants were presented with the following scenario:

Imagine that you and your roommate have just moved into a new apartment. Your friends come to visit you at your new place and give each of you a gift. They give you a Columbia coffee mug [pen]. The mug [pen] sells for \$5 at the bookstore. They give your roommate a pen [a coffee mug], that also sells for \$5 at the bookstore. Suppose your roommate offers you the chance to exchange the mug [pen] you were given for the pen [mug]. Would you accept the offer?

The objects (pen vs. mug) were counterbalanced across participants and had no significant effects. At the end of the study, all participants were fully debriefed and thanked for taking part.

#### Results and Discussion

Consistent with our predictions, participants in the promotion priming condition were more likely to indicate that they would exchange the object they received (44%) than participants in the

prevention priming condition (19%),  $\chi^2(1, N = 53) = 3.86, p < .05$ . Notably, only participants in the prevention priming condition were reluctant to change objects (i.e., had an exchange rate significantly lower than 50%). Participants in the promotion focus showed no endowment effect (i.e., did not have an exchange rate significantly lower than 50%).

The next two studies examined the relation between chronic promotion or prevention focus and the endowment effect. Study 4a used the same imagined scenario as Study 3, and Study 4b had the participants make an actual exchange choice.

#### Study 4a: Object Substitution for Individuals Varying in Strength of Regulatory Focus

This study used the same situation as in Study 3, except that ideal strength and ought strength were measured. We predicted that ideal strength would be related to more willingness to exchange the object, whereas ought strength would be related to less willingness to exchange the object.

##### Method

**Participants.** Sixty-six undergraduate Columbia University students (36 men, and 30 women) were paid participants in a battery study. All participants indicated that English was their native language. There were no differences between male and female participants in any of the results reported subsequently.

**Procedure.** Participants first completed the Self-Guide Strength measure (see Study 2 for a description of the measure). Thirty minutes later, after they had performed some unrelated experimental tasks, they answered the questionnaire described in Study 3. At the end of the study, all participants were fully debriefed and thanked for taking part.

##### Results and Discussion

Overall, 36% of the participants indicated that they would exchange the object they received initially for the one they were offered. This percentage was significantly lower than 50%,  $\chi^2(1, N = 66) = 4.93, p < .05$ , thus exhibiting the endowment effect. However, this effect was moderated by ideal strength and ought strength. Specifically, we coded the choice to keep the object as 0 and the choice to exchange as 1, and we regressed the score in a simultaneous regression analysis on ideal strength and ought strength. As predicted, ideal strength (controlling for ought strength) was positively related to willingness to exchange the object ( $B = .26, p < .01$ ), whereas ought strength (controlling for ideal strength) was negatively related to willingness to exchange the object ( $B = -.26, p < .01$ ).

We classified participants as predominantly promotion or predominantly prevention on the basis of a median split on the difference between their ideal strength and ought strength. Of the predominantly prevention focus participants, 25% were willing to exchange the object, a percentage significantly different from 50%,  $\chi^2(1, N = 32) = 8.01, p < .01$ . In comparison, of the predominantly promotion focus participants, 47% were willing to exchange the object, a percentage that did not significantly differ from 50%,  $\chi^2(1, N = 34) < 2$ . The difference between the percentage of predominantly promotion focus participants (47%) versus the percentage of predominantly prevention focus participants (25%) who were willing to exchange the object was mar-

ginally significant,  $\chi^2(1, N = 66) = 3.47, p = .06$ . Once again, only participants with a chronic prevention focus exhibited the endowment effect.

#### Study 4b: Object Substitution for Individuals Varying in Strength of Regulatory Focus

In this experiment, participants actually received a pen for participating in a study and could exchange it for another pen of a similar value. We examined the effects of chronic regulatory focus on willingness to exchange the pens.

##### Method

**Participants.** Ninety-six undergraduate Columbia University students (51 men, and 45 women) were paid participants in a battery study. All participants indicated that English was their native language. There were no differences between male and female participants in any of the results reported subsequently.

**Procedure.** All participants had completed the Self-Guide Strength measure a month earlier (see Study 2 for a description of the measure). During the experimental session, the participants performed an unrelated task and were told that, in appreciation of their taking part, they would receive a pen, over and above the regular payment they had been promised. The pen was selected at random from two different styles that had the same value of \$2.50. After giving the participants the pen and the money, the experimenter casually mentioned that there were two kinds of pens that were being used as gifts. The experimenter showed the participants the other pen and told them that they could try both pens out and decide whether they would like to exchange the pen they were initially given for the alternative pen. Participants were also asked to rate, on a 9-point scale ranging from *not at all* (1) to *extremely* (9), how much they liked the pen they were given. After participants made the decision, they were fully debriefed and thanked for taking part.

##### Results and Discussion

Overall, 33% of the participants indicated that they would exchange the pen they received initially for the one they were offered. This percentage was significantly lower than 50%,  $\chi^2(1, N = 96) = 4.60, p < .05$ , thus exhibiting the endowment effect. Not surprisingly, the more participants liked the pen, the less willing they were to exchange it. The correlation between liking score and willingness to exchange (not exchanging the pen was coded as 0, and exchanging the pen was coded as 1) was significant,  $r(94) = -.22, p = .02$ . Most important, the willingness to exchange the pen was moderated by ideal strength and ought strength. The willingness to exchange score was regressed in a simultaneous regression analysis on liking score, ideal strength, and ought strength. As predicted, ideal strength (controlling for ought strength and liking score) was positively related to willingness to exchange the pen ( $B = .18, p < .05$ ), whereas ought strength (controlling for ideal strength and liking score) was negatively related to willingness to exchange the object ( $B = -.22, p < .01$ ).

Unlike the decision to change the object, liking the object was unrelated to either ideal strength or ought strength, both  $t_s < 1$ . Our results thus show a dissociation between choice and liking, in that the former was related to strength of self-guides, but the latter was not. This result does not present a problem for our theory, because strategic inclinations of approach and avoidance, which

we believe explain the differences between promotion and prevention focus, readily translate into choosing or not choosing an alternative but not necessarily into liking or disliking it (see also Higgins, 1997, 1998, for a discussion of the distinction between valence and regulatory focus).

As in Study 4a, we classified participants as predominantly promotion focused or predominantly prevention focused on the basis of a median split on the difference between their ideal strength and ought strength. Predominantly promotion participants and predominantly prevention participants differed significantly in rate of exchanging the pen,  $\chi^2(1, N = 96) = 4.85, p = .03$ . Specifically, of the predominantly prevention focus participants, 24% were willing to exchange the pen. This percentage differed significantly from 50%,  $\chi^2(1, N = 48) = 5.04, p < .05$ . In comparison, of the predominantly promotion focus participants, 42% were willing to exchange the pen, a percentage that did not significantly differ from 50%,  $\chi^2(1, N = 48) < 2$ . Thus, once again, only participants with a chronic prevention focus exhibited the endowment effect.

Together, Studies 3, 4a, and 4b show that the endowment effect, or the reluctance to exchange objects, is characteristic of a prevention focus but not of a promotion focus. This is true for situationally induced regulatory focus (Study 3), as well as chronic promotion and prevention focus (Studies 4a and 4b).

Regulatory focus theory explains this finding, as well as the task substitution findings obtained in Studies 1 and 2, in terms of differences between promotion and prevention strategies and concerns. Specifically, a promotion focus involves an approach or risky strategy, whereas a prevention focus involves an avoidance or conservative strategy. When the original alternative is not bad, but the new alternative might be even better, individuals in a promotion focus would represent the new object or task as a potential gain or advancement that one might consider. In contrast, individuals in a prevention focus would represent the original object or task as the safe alternative that one should stick with.

The literature on the endowment effect explains this effect in terms of loss aversion, suggesting that giving up an object is perceived as a loss that is experienced intensely and cannot be compensated by a gain of comparable objective value. To account for our results, this theory would have to assume that loss aversion is more characteristic of prevention focus than of promotion focus. This possibility will have to be examined in future research.

### Study 5: Substitution for Object of Reattainment

Study 5 examined choice between an object one had in the past and a new object. All of the participants in the study received a prize and were told that they could keep it if their performance met a certain criterion. Participants in the promotion framing condition were told that they would keep the prize if they got 70% or more of the solutions. Participants in the prevention framing condition were told that they would not keep the prize if they missed 30% or more of the solutions. All of the participants were told later that they did not reach the criterion and thus they lost the prize object. Participants then had the opportunity to do another task in which they could win a prize if their performance met the criterion. They chose between working to reattain the original prize object they had lost and working to attain a new prize object. Notably, this paradigm is different from the classic endowment paradigm, be-

cause when the decision is made, people do not possess the old object. Nevertheless, from the perspective of regulatory focus theory, the same logic applies here as in the previous experiments. Thus, we predicted, as before, that participants in a prevention focus would be more likely to choose the original alternative (i.e., work to reattain the original prize), whereas participants in a promotion focus would be more open to choosing the new alternative (i.e., work to attain the new prize object).

### Method

*Participants.* Forty-nine undergraduate Columbia University students (29 men, and 20 women) were paid for their participation in a two-session experiment. All participants indicated that English was their native language. There were no significant differences between male and female participants in any of the results reported subsequently.

*Procedure.* In the first session of this experiment, each participant was presented with eight objects, similar to each other in dollar value, and rank ordered them for liking. The objects were a mug, a set of a pen and a pencil, a refrigerator magnet, a chocolate candy, an address book, a monthly planner, a pocket dictionary, and a picture frame. The two objects that each participant most liked were selected for the second session of the study.

In the second session, more than a week after the first, participants were given a prize, either their most liked object or their second most liked object, counterbalanced across conditions. The participants were told that, to keep them motivated throughout the experiment, they would be able to keep their prize if they performed well on an anagram task. Participants were randomly assigned to the promotion or prevention framing condition. Participants in the promotion framing condition were told "If you find 70% or more of all the possible solutions, you will keep the prize." Participants in the prevention framing condition were told "If you miss more than 30% of all the possible solutions, you will not keep the prize." On completing the anagram task, all of the participants received negative feedback. Participants in the promotion framing condition were told "You found 67.245% of all the possible solutions. Since you did not find 70% or more of all the possible solutions, you will not keep the prize." Participants in the prevention framing condition were told "You missed 32.755% of all the possible solutions. Since you missed more than 30% of all the possible solutions, you will not keep the prize." At that point, the experimenter told the participants that the prize would have to be returned but that they would have another chance to get a prize if they achieved a certain criterion in performing a second task. They were asked whether they would like to work for the prize they had just lost or work for another, substitute prize. The substitute prize was also one of their two most liked objects, as pretested in the first session.

### Results and Discussion

The results indicated that only 29% of the participants in the prevention framing condition chose the new prize, a rate significantly lower than 50%,  $\chi^2(1, N = 24) = 4.17, p < .05$ . In the promotion framing condition, 56% of the participants chose the new prize, thus showing a slight reverse tendency. The difference between promotion and prevention framing was also significant,  $\chi^2(1, N = 48) = 3.66, p = .058$ . Thus, a conservative tendency to choose the old alternative was obtained in the prevention focus condition but not in the promotion focus condition.

It is interesting to note that the paradigm of this study was different from the endowment paradigm, because participants did not possess the object when they chose between the original object and a substitute. The principle of loss aversion, however, could be applied to explain preferences for the original alternative if it is

assumed that working to regain the original prize is represented as eliminating a loss and, thus, is more intense than getting a new prize that is represented as a gain. This variation of the loss aversion principle involves shifts in reference point between the stability option and the change option. Specifically, this explanation has to assume that in considering the original object, participants think of the preloss situation as the neutral point. From this perspective, receiving the object is equivalent to reducing a loss. In considering the new object, it has to be maintained, participants think of the postloss situation as the reference point and therefore think of receiving the object as a gain. As for the endowment effect, regulatory focus theory is needed to account for why the principle of loss aversion applies to individuals in a prevention focus but not to individuals in a promotion focus. From the perspective of regulatory focus theory, the results of Study 5 are explained in the same way as the endowment findings. Because the original prize is not bad, but the new alternative might be even better, individuals in a promotion focus would represent the new prize as a potential advancement to be approached, whereas individuals in a prevention focus would represent the original prize as the safe, known alternative to stick with.

### General Discussion and Conclusion

According to regulatory focus theory (Higgins, 1997, 1998), a prevention focus is concerned with avoiding mismatches to the goals of safety and security, whereas a promotion focus is concerned with approaching matches to the goals of advancement and accomplishment. According to this theory, a promotion focus is concerned with ensuring hits and ensuring against errors of omission, whereas a prevention focus is concerned with ensuring correct rejections and ensuring against errors of commission. When the old alternative is satisfactory and an opportunity for change is introduced into the situation, a change has the potential benefit of providing advancement and accomplishment (a hit), but it also has the potential cost of introducing an error of commission. Thus, individuals in a promotion focus would be more open to considering change than individuals in a prevention focus. Conversely, stability, or rejecting change, has the potential benefit of safety and security (a correct rejection), but it also has the potential cost of introducing an error of omission. Thus, individuals in a prevention focus would be more rejecting of change than individuals in a promotion focus.

Two choice situations of this type were examined: (a) a choice between resuming an old or original course of action and starting a new activity after interruption and (b) a choice between retaining an object in one's possession (or regaining an object one possessed in the past) and changing it for an alternative object. Consistent with our predictions, we found that inducing participants with a promotion focus made them more willing than prevention-induced participants to change to a different task instead of resuming an interrupted task (Study 1) and to change objects they possessed for alternative objects (Studies 3 and 5). Also consistent with our predictions, we found that a stronger chronic promotion focus (i.e., high ideal strength) was associated with greater willingness to substitute tasks (Study 2) and objects (Studies 4a and 4b), whereas the reverse was true for a stronger chronic prevention focus (high ought strength).

Our results suggest that the "conservative" tendency or the preference for stability is not general but, rather, is characteristic only of individuals in a prevention focus. Individuals in a promotion focus are not conservative, instead, they are evenhanded in considering the relative merits of old and new alternatives. In other words, the results of our studies suggest that individuals in a promotion focus are willing to change if they believe that the new alternative is an advancement over the original alternative, whereas individuals in a prevention focus feel more obliged to stick with the original alternative as long as it is satisfactory. Notably, it is not the case that individuals in a promotion focus seek change as an end in itself. Rather, they are open to considering the potential benefits of change and would choose it if they think that the new alternative is better than the old one.

Interestingly, the literatures on task substitution and on object substitution (i.e., endowment) have not been related to each other or to the general question of preferences between stability and change. The literature on task substitution dealt primarily with strength of motivation to resume the interrupted task, whereas the literature on the endowment effect dealt primarily with representation of the transaction in terms of losses and gains (rather than a net revenue representation). Only within regulatory focus theory have these two lines of research been connected within a broader framework that deals with both motivation and representation in relation to general preferences for stability versus change. The distinction between promotion and prevention focus provides a new perspective on task substitution and the endowment effect that has implications for future research.

The literature on task substitution, for example, asserts that representing a task in terms of more abstract goals will result in more willingness to accept a substitute. Possibly, a prevention focus encourages representation in a more concrete and detailed form because every component of the task can potentially thwart the goal of safety and security. In contrast, a promotion focus might encourage a more abstract and general representation of a task because the goals of advancement and growth depend on finding any means of making progress.

If this explanation is applied to exchange of objects rather than tasks, one would predict that the same object would be represented in terms of more concrete goals in a prevention focus than in a promotion focus. For example, it might be more likely that a received coffee mug would be represented as "something to drink coffee from" rather than as "a useful object" in a prevention focus than a promotion focus. Clearly, the latter representation would make the coffee mug substitutable by a wider variety of objects than the first representation. Interestingly, this idea has not been proposed in the literature on endowment, which has dealt very little with the different ways that people might represent the possessed object itself. Indeed, it could be that exchange goods create little or no endowment effect (Kahneman et al., 1990; van Dijk & van Knippenberg, 1996) because they are represented very abstractly as "goods."

Stability and change are often central aspects of interpersonal, political, and economic real-life decisions. The present research suggests that, in all of these domains, regulatory focus, either chronic or induced, would be an important determinant of whether people would seek change or stick to current states and alternatives.

In the situations examined in this article, in which the old alternative was satisfactory and the new alternative could be an

advancement, the regulatory focus logic predicts that a promotion focus would induce more openness to change than a prevention focus. The same underlying logic, however, predicts different results if the situation were changed.

For example, describing the merits of stability in promotion terms of potential advancement (e.g., "going back to the interrupted task gives you an opportunity to advance and enhance what you did") should sway individuals in a promotion focus toward choosing stability but should have less effect on individuals in a prevention focus, for whom advancement is not the major concern. In contrast, describing the merits of stability in terms of safety and security should have a smaller effect on individuals in a promotion focus than a prevention focus. Similarly, describing the merits of change in prevention terms of safety and security (e.g., "by choosing the new task you can avoid repeating old mistakes") should sway individuals in a prevention focus toward choosing change but should have less effect on individuals in a promotion focus, for whom avoiding mistakes is not the major concern. In contrast, describing the merits of change in terms of advancement should have a smaller effect on individuals in a prevention focus than a promotion focus.

This logic has important implications for persuasion and implementation of public policy. If people are reluctant to change from a currently satisfactory medical procedure to a new medical procedure, for example, then persuasion should attempt to emphasize the prevention-related merits of the new alternative (e.g., it is more safe) or the prevention-related drawbacks of the old alternative (it is not totally reliable) rather than address the promotion aspects of the situation (e.g., the new procedure is more advanced). The reason is that if people are initially choosing stability because they are in a prevention focus (as our results would suggest), then new prevention-related arguments about the merits of change would be more likely to increase the willingness to change than promotion-related arguments.

## References

- Adler, D. L., & Kuonin, J. S. (1939). Some factors operating at the moment of resumption of interrupted tasks. *Journal of Psychology*, *7*, 255–267.
- Atkinson, J. W. (1953). The achievement motivation and recall of interrupted and completed tasks. *Journal of Experimental Psychology*, *46*, 381–390.
- Atkinson, J. W. (1964). *An introduction to motivation*. Princeton, NJ: Van Nostrand.
- Bar-Hillel, M., & Neter, E. (1996). Why are people reluctant to exchange lottery tickets? *Journal of Personality and Social Psychology*, *70*, 17–27.
- Bassili, J. N. (1995). Response latency and the accessibility of voting intentions: What contributes to accessibility and how it affects vote choice. *Personality and Social Psychology Bulletin*, *21*, 686–695.
- Bassili, J. N. (1996). Meta-judgmental versus operative indices of psychological attributes: The case of measures of attitude strength. *Journal of Personality and Social Psychology*, *71*, 637–653.
- Caron, A. J., & Wallach, M. A. (1957). Recall of interrupted tasks under stress: A phenomenon of memory or learning? *Journal of Abnormal and Social Psychology*, *55*, 372–381.
- Cartwright, D. (1942). The effect of interruption, completion and failure upon the attractiveness of activity. *Journal of Experimental Psychology*, *31*, 1–16.
- Carver, C. S., & Scheier, M. F. (1981). *Attention and self-regulation: A control-theory approach to human behavior*. New York: Springer-Verlag.
- Carver, C. S., & Scheier, M. F. (1990). Principle of self-regulation: Action and emotion. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 3–52). New York: Guilford Press.
- 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.
- Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *72*, 218–232.
- Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, *70*, 461–475.
- Fazio, R. H. (1986). How do attitudes guide behavior? In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 204–243). New York: Guilford Press.
- Fazio, R. H. (1990). A practical guide to the use of response latency in social psychological research. In C. Hendrick & M. S. Clark (Eds.), *Research methods in personality and social psychology: Review of personality and social psychology* (Vol. 11, pp. 74–97). Newbury Park, CA: Sage.
- 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: Erlbaum.
- Förster, J., Higgins, E. T., & Idson, L. C. (1998). Approach and avoidance strength during goal attainment: Regulatory focus and the "goal looms larger" effect. *Journal of Personality and Social Psychology*, *75*, 1115–1131.
- Gollwitzer, P. M., & Bargh, J. A. (Eds.). (1996). *The psychology of action: Linking cognition and motivation to behavior*. New York: Guilford Press.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*, 4–27.
- Hardie, B. G. S., Johnson, E. J., & Fader, P. S. (1993). Modeling loss aversion and reference dependence effects on brand choice. *Marketing Science*, *12*, 378–394.
- Heckhausen, H. (1991). *Motivation and action*. Berlin: Springer-Verlag.
- Henle, M. (1944). The influence of valence on substitution. *Journal of Psychology*, *17*, 11–19.
- Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133–168). New York: Guilford Press.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, *52*, 1280–1300.
- Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1–46). New York: Academic Press.
- Higgins, E. T., Klein, R., & Strauman, T. (1985). Self-concept discrepancy theory: A psychological model for distinguishing among different aspects of depression and anxiety. *Social Cognition*, *3*, 51–76.
- Higgins, E. T., Roney, C., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance: Distinct self-regulatory systems. *Journal of Personality and Social Psychology*, *66*, 276–286.
- 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.
- Higgins, E. T., & Silberman, I. (1998). Development of regulatory focus: Promotion and prevention as ways of living. In J. Heckhausen & C. S. Dweck (Eds.), *Motivation and self-regulation across the life span* (pp. 78–113). New York: Cambridge University Press.
- Higgins, E. T., & Tykocinski, O. (1992). Self-discrepancies and biograph-

- ical memory: Personality and cognition at the level of psychological situation. *Personality and Social Psychology Bulletin*, 18, 527-535.
- Judd, C. M., & McClelland, G. H. (1989). *Data analysis: A model-comparison approach*. Orlando, FL: Harcourt Brace Jovanovich.
- Kahneman, D., Knetsch, J. L., & Thaler, R. (1990). Experimental tests of the endowment effect and the Coase theorem. *Journal of Political Economy*, 98, 1325-1348.
- Kahneman, D., Knetsch, J. L., & Thaler, R. (1991). The endowment effect, loss aversion, and status quo bias. *Journal of Economic Perspectives*, 5, 193-206.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263-291.
- Knetsch, J. L. (1989). The endowment effect and evidence of nonreversible indifference curves. *American Economic Review*, 79, 1277-1284.
- Krauss, R. M., Vivekananthan, P. S., & Weinheimer, S. (1968). "Inner speech" and "external speech": Characteristics and communication effectiveness of socially and non-socially encoded messages. *Journal of Personality and Social Psychology*, 9, 295-300.
- Kruglanski, A. W. (1996). Goals as knowledge structures. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 599-618). New York: Guilford Press.
- Lewin, K. (1935). *A dynamic theory of personality*. New York: McGraw-Hill.
- Lewin, K. (1951). *Field theory in social science*. New York: Harper.
- Lissner, K. (1933). Die entspannung von Bedürfnissen durch Ersatzhandlungen [The resolution of needs by substitutive acts]. *Psychologische Forschung*, 18, 218-250.
- Loewenstein, G., & Issacharoff, S. (1994). Source dependence in the valuation of objects. *Journal of Behavioral Decision Making*, 7, 157-168.
- Marrow, A. J. (1938). Goal tension and recall: I. *Journal of General Psychology*, 19, 3-35.
- Martin, L. L., Tesser, A., & Cornell, D. P. (1996). On the substitutability of self-protective mechanisms. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 48-68). New York: Guilford Press.
- Miller, G. A., Galanter, E., & Pribram, K. H. (1960). *Plans and the structure of behavior*. New York: Holt, Rinehart & Winston.
- Pervin, L. A. (Ed.). (1989). *Goal concepts in personality and social psychology*. Hillsdale, NJ: Erlbaum.
- Sankar, S., & Johnson, E. J. (1997). Mere possession effects without possession in consumer choice. *Journal of Consumer Research*, 24, 105-117.
- Shah, J., & Higgins, E. T. (1997). Expectancy  $\times$  Value effects: Regulatory focus as determinant of magnitude and direction. *Journal of Personality and Social Psychology*, 73, 447-458.
- Shah, J., Higgins, E. T., & Friedman, R. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology*, 74, 285-293.
- Tanner, W. P., & Swets, J. A. (1954). A decision making theory of visual detection. *Psychological Review*, 61, 285-293.
- Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, 1, 39-60.
- Trope, Y., & Liberman, A. (1996). Social hypothesis testing: Cognitive and motivational mechanisms. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 239-270). New York: Guilford Press.
- Tversky, A., & Kahneman, D. (1994). Loss aversion in riskless choice: A reference-dependent model. *Quarterly Journal of Economics*, 107, 1039-1061.
- van Dijk, E., & van Knippenberg, D. (1996). Buying and selling exchange goods: Loss aversion and the endowment effect. *Journal of Economic Psychology*, 17, 517-524.
- von Bertalanffy, L. (1968). *General systems theory*. New York: Braziller.
- Weiner, B. (1965). Need achievement and resumption of incomplete tasks. *Journal of Personality and Social Psychology*, 1, 165-168.
- Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self completion*. Hillsdale, NJ: Erlbaum.
- Zeigarnik, B. (1927). Das Behalten erledigter und unerledigter Handlungen [The memory of completed and uncompleted actions]. *Psychologische Forschung*, 9, 1-85.

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