

Unraveling Priming: When Does the Same Prime Activate a Goal versus a Trait?

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Consumers are constantly exposed to subtle situational cues that can influence behavior by priming either goals or “mere” semantic representations such as personality traits. However, little is known about when exactly such priming leads to goal activation, which can have enduring behavioral effects, and when the same prime leads to semantic activation, characterized by short-lived effects. This research proposes an activation-striving model, which proposes that behavioral effects of primes are moderated by discrepancies between the prime and the self-concept. Three studies suggest that self-consistent primes are more likely to influence choice via semantic activation, whereas self-discrepant primes are more likely to influence choice via goal activation.

In the past decade, a vast body of research has documented the nonconscious effects of subtle situational cues on behavior, challenging the traditional view that consumers are fully aware of their decisions and behaviors (e.g., Bargh 2002; Dijksterhuis et al. 2005). Mentally represented constructs such as goals, traits, and stereotypes are believed to be capable of nonconscious activation by mere perception of situational cues, most typically leading to behaviors and choices consistent with the primed concept (e.g., Bargh and Chartrand 1999; Bargh and Ferguson 2000; Berger and Fitzsimons 2008).

Importantly, this literature has made a distinction between activation of “mere” semantic constructs, such as personality traits and stereotypes, and activation of goals (Bargh et al. 2001; Dijksterhuis, Chartrand, and Aarts 2007; Wheeler and Petty 2001). This distinction not only is important from a conceptual standpoint but also may have meaningful and profound behavioral consequences for marketers and consumers given that these two constructs are associated with distinct temporal patterns of activation and ensuing behaviors. Whereas behavioral effects resulting from semantic priming tend to diminish fairly quickly over time as the

impact of the prime fades (Bargh 1997), behavioral effects resulting from goal activation are believed to persist over time until the goal is fulfilled and may even increase according to some accounts (Atkinson and Birch 1970; Bargh et al. 2001; Chartrand et al. 2008; Ramanathan and Menon 2006). These divergent temporal patterns associated with activation of goals versus semantic constructs raise important questions for consumer judgment and decision making. Consider, for example, a situation in which a consumer is exposed to a marketing stimulus such as product advertising. How can one predict, a priori, whether this stimulus will activate a goal resulting in more enduring effects (e.g., searching for a store where a Wii console is available) or whether the same stimulus will only enhance the accessibility of semantic knowledge related to the advertised product, resulting in more temporary effects (e.g., momentary accessibility of concepts such as fun, game, or video)?

Despite its theoretical and practical importance, the question of when a given situational cue activates a goal and when the same cue activates a mere semantic representation has not received enough attention in the literature (see Fitzsimons, Chartrand, and Fitzsimons [2008] for an exception). Stated differently, we still know little about when the behavioral effects of a given prime will manifest in a goal versus semantic activation pattern. The literature has by and large addressed this question using *ex post* indicators. Specifically, if the behavioral effect of priming manifests temporal endurance or escalation (i.e., persists or increases following a delay), then the activated construct is characterized as a goal; if the effect dissipates quickly, then the activated construct is characterized as a semantic representation such as a personality trait (Dijksterhuis et al. 2007; Fitzsimons et al. 2008; see Förster, Liberman, and Friedman [2007] for

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a discussion of additional unique goal characteristics). Furthermore, studies on automaticity often feature surprisingly similar priming manipulations that seem to lead to goal activation in some cases and to semantic activation in others (Bargh 2006). For example, unscrambling words related to frugality led to goal activation in Chartrand et al. (2008), but unscrambling words related to rudeness led to semantic stereotype activation in Bargh, Chen, and Burrows (1996). As illustrated in the examples above, the ambiguity regarding the exact pattern of activation undermines the applicability of these findings to understanding consumers' behavior in real world situations. The growing recognition that nonconscious effects play a significant role in consumers' daily experiences (e.g., Berger and Fitzsimons 2008; Dijksterhuis et al. 2005; Maimaran and Wheeler 2008) calls for a redressing of this shortcoming.

The primary goal of this research is to address this shortcoming by exploring the antecedents of motivational versus semantic construct activation. We propose the Activation-Striving Model, which builds on the distinctive features of motivational and semantic activation processes. Specifically, the model focuses on the role of discrepancies between the prime and the active self-concept in predicting when the same prime will lead to temporally persistent or escalating effects, indicative of goal activation, as opposed to temporally diminishing effects, indicative of semantic construct activation. The model proposes that situational cues are more likely to lead to temporally enduring effects when the primed content is perceived as discrepant from one's active self-concept (Custers and Aarts 2005a, 2007). In contrast, the same cue is more likely to lead to temporally diminishing effects when the primed content is perceived as consistent with, or reflective of, one's active self-concept (cf. Smeesters et al. 2003).

The rest of this article is structured as follows. First, we review the key discriminating features of semantic versus motivational activation processes. This theoretical discussion then serves as the basis for our activation-striving model and the hypotheses arising from it. These hypotheses are tested subsequently across three studies. Finally, we discuss the implications of our research and suggest directions for future research.

THEORETICAL BACKGROUND

Theories on automatic perception-behavior effects are based on the underlying assumption that these effects are mediated by mental representations such as goals and semantic constructs. Over time, these mental representations become associated in memory not only with stimuli or features of those situations in which they have been repeatedly and consistently activated but also with representations of resulting behaviors. Consequently, both semantic constructs and goals are capable of automatic activation in memory by the mere perception of related stimuli (Bargh 1994; Devine 1989; Fitzsimons and Bargh 2003; Higgins 1996; Kruglanski 1996). Once activated, they can lead to associated behaviors (Dijksterhuis et al. 2005; see Dijksterhuis et al.

[1998] for a discussion of behavioral contrasts). The central thesis of the current research is that the degree of perceived congruence between the active self-concept and the primed construct moderates which of these two processes will mediate prime-behavior effects. Specifically, we argue that the more temporary semantic priming effects are likely to ensue when the prime is reflective of the self-concept. In contrast, the more enduring goal-priming effects are likely to ensue when the prime is discrepant from the self-concept. We elaborate on this thesis in the following sections, highlighting differences in the role of self-prime congruence in semantic versus goal activation processes.

The Role of Self-Consistency in Semantic Activation Processes

Semantic constructs are characterized as abstract conceptual representations that are often activated during social interaction and may temporarily enhance the accessibility of associated behavioral knowledge. Unlike goals, the process underlying semantic construct activation is believed to be passive, with no motivational properties (Bargh et al. 2001; Dijksterhuis and Bargh 2001). When the activated construct is relevant to a possible associated behavior, it can increase the likelihood of that behavior (Sparrow and Wegner 2006). However, as stated earlier, existing research suggests that semantic representations, once activated, decay in memory sometimes within seconds of exposure to the stimulus. Consequently, their impact on behavior tends to be most pronounced immediately after priming (Dijksterhuis et al. 2007; Higgins, Bargh, and Lombardi 1985). As time passes, the impact of the primed construct fades out unless it is reactivated, either through exposure to external cues or through one's own behavior. The question is, are there factors that can influence the magnitude of the immediate impact of semantic priming on behavior? The answer to this question comes from research suggesting that stimuli tend to be processed more intensely when they are perceived as forming part of (or are consistent with) a person's active self-concept. We elucidate on this research next.

Research on self-schemata (Markus 1977) suggests that people are more sensitive to self-matching stimuli. In general, self-schemata have been shown to serve as perceptual filters: stimuli that match a person's self-schema (i.e., are self-consistent) tend to be processed with greater intensity than stimuli that do not match the schema (Markus 1977), using greater processing resources (Wheeler, Petty, and Bizer 2005). Consistent with this notion, research on behavioral priming suggests that people for whom the prime is self-consistent can show semantic activation effects in response to primes that are too subtle and nuanced to lead to detectable effects among people for whom the prime is self-inconsistent. For example, priming individuals subliminally with the Asian American stereotype has been shown to affect those for whom the prime is self-consistent (i.e., Asian Americans) but not necessarily those for whom the prime is self-inconsistent (i.e., non-Asian Americans; Shih

et al. 2002). Similarly, priming participants with either a negative version or a positive version of the stereotype of the elderly led to correspondingly divergent effects on forgetful behavior among elderly participants but not among young participants (Levy 1996). Self-related primes (e.g., “elderly”) are likely to have stronger associations with the activated semantic representations (e.g., “forgetfulness”), which, in turn, can increase the magnitude of semantic priming effects (Dijksterhuis et al. 2000). Further, to the extent that the primed content overlaps with existing components of the self-concept, it may influence behavior by highlighting these aspects of the self-concept (Wheeler, DeMarree, and Petty 2007).

In sum, our discussion thus far suggests the following. First, semantic priming effects are likely to decay over time, with the biggest behavioral impact immediately following the prime. Second, these temporary effects are likely to be more pronounced when the prime is perceived as reflective of, rather than discrepant from, the self-concept. Thus, although semantic activation may ensue even when the prime is perceived as self-discrepant (e.g., priming of self-discrepant stereotypes; Bargh et al. 1996), evidence suggests that it will tend to be stronger, and therefore more likely to manifest in detectable behavioral effects, when the prime is perceived as consistent with the self. Next, we discuss how the effects of goal priming are likely to be opposite those of semantic priming on both the counts highlighted above.

The Role of Self-Discrepancy in Goal Activation Processes

Whereas behavioral effects resulting from semantic priming are understood in terms of temporarily enhanced accessibility and believed to be predominantly associative in nature, theories on automatic goal pursuit emphasize three specific factors that are required for goal activation and adoption (e.g., Bargh et al. 2001; Custers and Aarts 2005a). First, goal activation is believed to be contingent on the activation of a mentally represented end state (Förster et al. 2007) and the behavioral strategies of action associated with its accomplishment (Aarts and Dijksterhuis 2000). The second factor, which is unique to goal activation, is the perceived desirability of the activated end state, such that its attainment should be associated with happiness, satisfaction, and/or relief (Custers and Aarts 2005a, 2005b; Förster et al. 2007). Unlike semantic priming, which does not require the activated concept to be associated with positive value (as demonstrated by research on priming of negative social stereotypes), research has shown that goal adoption requires the represented end state to be associated with positive affect or value, which serves as an approach signal for mentally accessible goals (Aarts, Gollwitzer, and Hassin 2004; Fishbach and Labroo 2007). Even in situations overwhelmed by negative emotion (e.g., encountering a predator), the goal instigated as a result of the situation (e.g., escaping the predator) is, in all likelihood, perceived as a positive outcome.

To illustrate the roles of end-state activation and desirability in goal adoption and pursuit, consider the concept “briefcase.” Exposure to this concept may activate associated semantic constructs, such as a businessman’s stereotype or even business-like (e.g., competitive) behaviors (Kay et al. 2004). These activated semantic constructs can influence behavior in the absence of any motivational properties. However, the same stimulus may link to a relevant representation of a desirable, feasible, and (as we argue herein) self-discrepant end state. For example, if the perceiver is currently struggling in an ongoing ultimatum game, a business-like briefcase may link to the represented end state of payoff maximization, which could potentially result in goal activation (e.g., to maximize payoff by playing competitively).

The third condition for goal adoption and pursuit, which is most germane to the present research, is the assessment of self-discrepancies. Most theories on goal pursuit emphasize that both conscious and automatic goal pursuit is driven by the desire to reduce a perceived discrepancy between one’s actual state and the desired end state (Carver and Scheier 1990, 1998; Higgins 1987; Kruglanski et al. 2002). Furthermore, these theories suggest that once the desirable end state has been activated and adopted as a goal, people continuously assess—either consciously or outside of awareness—their progress by comparing their actual state with the activated end state. A perceived discrepancy between the two signals that the goal has not been attained and therefore functions as a motivator (Carver and Scheier 1990; Dijksterhuis et al. 2007).

Self-discrepancies could arise either when the represented end state is perceived as discrepant from the actual state, creating a tension that motivates its pursuit, or when the actual state is first perceived as proximate to the desired end state but then forced away from that state, motivating people to restore their previous state (Dijksterhuis et al. 2007). Increasing the accessibility of the desirable end state thus creates a perceived discrepancy and motivates goal pursuit.

Recent research provides support for this conceptualization. For example, Custers and Aarts (2005a, 2007) demonstrated that exposing participants to goal-discrepant situations activated representations of actions that were instrumental to goal attainment. Similarly, Fitzsimons et al. (2008) found that exposing participants to an “honest” brand (e.g., Disney) activated brand image-consistent goals (e.g., being honest) more strongly among participants who believed they had performed poorly earlier on honesty measures.

The role of self-discrepancies in goal pursuit is directly related to another important feature of goal activation, namely, the temporal endurance of accessible goals. Theories about goal dynamics suggest that activated goals and goal-related cognitions tend to persist in memory for relatively long durations, so long as the goal has not been fulfilled or satiated through goal-directed action. For example, Atkinson and Birch (1970, 1974/1983) have argued that the consummatory forces operating on active goals should be

TABLE 1
 IMPLICATIONS OF PRIME-SELF DISCREPANCIES FOR SEMANTIC- AND
 GOAL-ACTIVATION EFFECTS

	Self-consistent primes	Self-discrepant primes
Implications for semantic activation	Stronger initial activation Stronger immediate effect	Weaker initial activation Weaker immediate effect
Implications for goal activation	Weaker motivational striving Weaker delayed effect	Stronger motivational striving Stronger delayed effect

small, as long as no action is undertaken toward satiating the goal, just as a food-deprived person's drive to eat would persist under such conditions (up to a limit, defined by the strength of the inclination to act divided by the magnitude of consummatory force). Further, reiterating the active goal during this time interval should strengthen the motivational tendency to move toward the goal. Consistent with this early account, more recent evidence suggests that the accessibility of goal-related constructs may be enhanced while a conscious goal is held in memory, as long as the goal is active (Altmann and Trafton 2002; Goschke and Kuhl 1993; Marsh, Hicks, and Bink 1998). Given that conscious and nonconscious goals are believed to be largely indistinguishable in terms of their basic mechanism (Bargh et al. 2001; Chartrand and Bargh 1996), nonconscious goal activation should follow a similar dynamic trajectory. Namely, an activated goal is likely to persist and may even increase in strength after a delay as a result of the prolonged exposure (Aarts et al. 2004) as long as no feedback on the attainment of the goal has been received and the perceived discrepancy between the self and the goal holds. Recent research provides confirmatory evidence suggesting that goal activation tends to affect consumer behavior in a temporally escalating pattern (Chartrand et al. 2008; Fitzsimons et al. 2008).

Kruglanski et al.'s (2002) goal-systems theory sheds further light on the hypothesized mechanism underlying the temporal endurance of activated goals. Their account focuses on goal commitment, which is believed to increase with time and enhance the likelihood that the active goal affects behavior. Basing their approach on the "mental contrasting" work of Oettingen, Pak, and Schnetter (2001), Kruglanski and his colleagues proposed that commitment to a goal is increased the more the means to achieving that goal are apparent. Contrasting the desired end state with the discrepant actual state is suggested to instigate "a means-generation attempt that may or may not succeed. When it does succeed, the means is particularly accessible (having just been generated) hence increasing commitment" (Kruglanski et al. 2002, 22). In other words, it is possible that the process by which means are generated is progressive: the more one's mind reflects on the desired end state and on the gap between that end state and the actual state (either consciously or nonconsciously), the more means are generated and the more committed one becomes to attaining the goal.

In sum, self-discrepancy emerges as a key feature of goal adoption and pursuit. Existing theoretical accounts and experimental evidence seem to be in agreement that perceiving an initial gap between one's actual state and a desired end state instigates the state of striving associated with goal pursuit. Furthermore, monitoring the discrepancy between the self and the end state, as the goal is being pursued, serves to maintain the goal and may affect behavior in a temporally persistent or increasing pattern. In the next section we present the activation-striving model, which builds on the discussion thus far and identifies conditions when the same prime will yield behavioral effects that follow a semantic activation pattern versus those that follow a goal activation pattern.

THE ACTIVATION-STRIVING MODEL

For a given individual, the representations of all positively valenced semantic and goal constructs can be aligned on a continuum ranging from self-consistent (i.e., representing a state that is part of the active self-concept) to self-discrepant (i.e., representing a state that the self is yet to achieve). We propose that whether a prime affects behavior via semantic activation or via goal activation may depend on where, along this continuum, the primed construct is located. The implications of self-prime consistency versus discrepancy, for both semantic constructs and goals, are summarized in table 1. When the prime is self-consistent, a more intense activation of associated constructs is expected initially. However, for the same reason, motivational striving is either unlikely to be initiated at all or too weak to manifest in behavior. Conversely, when the prime is self-discrepant, this may lead to a weaker and more limited immediate effect on resulting associative activation but, on the other hand, will promote motivational striving, which may persist and even increase over time.

The activation-striving model thus implies a trade-off between the initial strength of associative activation and the temporal trajectory of the activation and commitment. According to the model, the effect of situational primes on behavior is more likely to follow a temporally diminishing pattern, mediated by semantic activation and lacking in motivational properties, when the prime is consistent with the active self-concept. In contrast, prime-behavior effects are likely to follow a temporally persistent or escalating pattern,

mediated by weaker initial semantic activation and then followed by goal activation, when the prime is perceived as discrepant from the active self-concept (see fig. 1).

The proposed model does not assume that semantic activation is absent when behavioral effects are mediated by goal activation. In fact, as pointed out by Dijksterhuis et al. (2007), it is hard to see how priming would not involve, as a precondition to any motivational process, activation of corresponding semantic components as well. Thus, goal activation should be thought of as occurring on top of any initial semantic activation, to the extent that other conditions are also met. It is important to note, however, that the semantic components occurring with goal activation should follow the same principles with respect to self-discrepancies as any other semantic activation process: they should be weaker when self-discrepant, regardless of whether a goal is activated subsequently.

Also note that the current investigation focuses on the extreme ends of the self-discrepancy continuum, namely, primes that are either distinctly consistent with the self-concept or distinctly discrepant from it. However, in many cases primes may represent desirable concepts that constitute part of the self-concept at one level but at the same time are perceived as discrepant end states at another level. Consider, for example, top-tier university students exposed to the concept of high performance (Bargh et al. 2001, experiment 3). For these individuals, the notion of performance is highly self-reflective. At the same time, however, they are also likely to experience considerable discrepancy between their self-concept and the ever-higher performance benchmark provided by their competitive environment. In such cases, behavioral effects are likely to manifest strongly immediately after exposure (due to intense associative semantic activation) and then endure or increase further over time (due to motivational striving).

It is also important to acknowledge in advance conditions under which the model will apply. As discussed above, goal adoption and pursuit are contingent on the end state being desirable. In other words, the activation-striving model presumes that the primed concept is perceived as a desirable end state to begin with, an aspect that we test in our studies.

METHOD

Experimental testing of the predictions derived from the activation-striving model brings forth two challenges. The first is to identify dependent variables that could discriminate between motivational and semantic activation processes. The second is to define self-prime congruence in ways that can be faithfully operationalized. The next two sections discuss these aspects of the research.

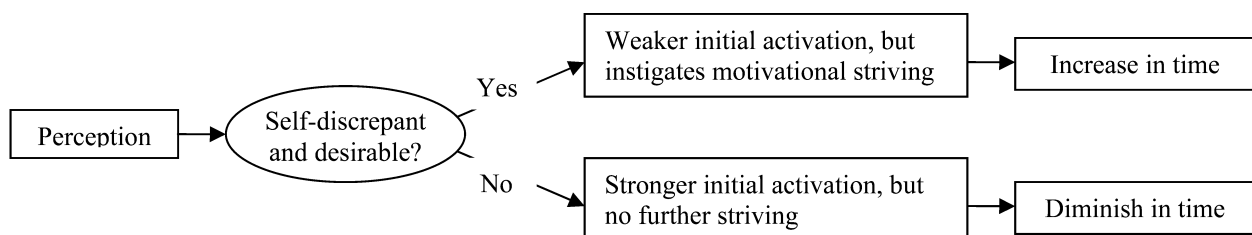
Paradigms to Distinguish between Semantic and Motivational Activation

Prior research has developed techniques designed to tease apart the behavioral consequences of semantic versus motivational construct activation. The first method used in this research relies on the previously discussed principle of temporal escalation versus attenuation (Bargh et al. 2001), a principle that has gained the status of arguably a gold standard for this purpose (e.g., Chartrand et al. 2008; Fitzsimons et al. 2008). Thus, we use temporal attenuation, in which a prime manifests in consumer choice more strongly immediately after exposure to the prime, as evidence suggesting that the effect of the prime is mediated by activation of semantic constructs only. Further, we use temporal escalation, in which the same prime manifests in consumer choice more strongly after a delay, as evidence suggesting that the effect is mediated by goal activation. This attenuation-escalation paradigm is used in all three studies to distinguish between semantic and goal-priming effects.

A second technique for distinguishing between motivational and semantic activation processes is based on the principle of goal satiation, according to which goal activation should decrease in strength once the goal has been fulfilled (Atkinson and Birch 1974/1983; Förster, Liberman, and Higgins 2005; Marsh et al. 1998). Such a decrease should not occur for semantic activation. This goal satiation paradigm is used in study 3 where, in addition to collecting temporal escalation measures, participants are asked to make two real sequential choices between options that differ along the same goal-relevant dimension. To the extent that the activated construct driving behavior is a goal, prior research suggests that making a real goal-fulfilling choice in the first

FIGURE 1

THE ACTIVATION-STRIVING MODEL



task should decrease the tendency to make another goal-consistent choice in the second task. If the activated construct is a mere semantic representation, then choice in the second task should not decrease following choice in the first task. It is important to note that the principle of goal gradients (see Förster et al. [2007]; Kivetz, Urminsky, and Zheng [2006] for reviews) implies that motivation to attain a goal should only decrease when the ensuing goal-related behavior is perceived as fulfilling the goal. We therefore adapt a satiation paradigm that has been found to be effective in prior research on consumer choice (Chartrand et al. 2008, study 3).

Identifying Primes That Are Consistent with or Discrepant from the Self

The second challenge to the experimental tests of our predictions is identifying primes that can vary in their levels of discrepancy from the self. In the studies that follow, we use both direct and indirect measures of prime-self discrepancy. The notion that the self is composed of different components has been proposed by many theorists, the most relevant to our research being the work by Higgins on self-discrepancy theory (Higgins 1987; Higgins et al. 1986), which provides a systematic framework for describing these different aspects of the self as well as different types of discrepancies in self-concept. Self-discrepancy theory focuses on three basic domains of the self: the actual self, the ideal self, and the ought self. The ideal self is defined as the type of self one ideally would like to have, the type of person one hopes, wishes, and aspires to be. The ought self is defined as what one believes one ought to have, the type of person one believes it is one's duty, obligation, and responsibility to be. Higgins and his colleagues developed the Selves Questionnaire (Higgins 1987, 1989), a measure of the congruency (or discrepancy) between people's ideal selves (the attributes they wish to possess) and actual selves (the degree to which they believe they actually possess those attributes), and between their ought selves (the attributes they see as their duty to possess) and their actual selves.

In line with the activation-striving model, we predict that primes that are associated with an ought self would be more likely to influence people with an ought-consistent self-concept via semantic activation but more likely to influence people with an ought-inconsistent self-concept via goal activation. Conversely, primes associated with an ideal self would be more likely to influence people with an ideal-consistent self via semantic activation but more likely to influence people with an ideal-inconsistent self via goal activation.

We use these three basic facets of the self (actual, ideal, and ought), proposed by Higgins and his colleagues, to operationalize self-prime congruence in studies 1 and 2. Note, however, that in order to generate specific instances of self-prime congruence, we need to establish double dissociation between our primes and ought and ideal selves. Specifically, we need to first validate that some primes (e.g., frugality)

are associated with an ought self but not with an ideal self whereas other primes (e.g., luxury) are associated with an ideal self but not with an ought self. To this end, a pretest was conducted in which 227 participants were randomly assigned to one of two conditions: in one condition, participants were asked to consider Mr. White, a hypothetical person who "pursues the life he ideally would like to have. He tries to be the type of person he hopes, wishes, and aspires to be." In the other condition, participants were asked to consider a Mr. White who "pursues the life he believes he ought to have. He tries to be the type of person he believes it is his duty, obligation, and responsibility to be." These instructions were adapted from the wording used in the Selves Questionnaire (e.g., Avnet and Higgins 2006). Specifically, the first of these two profiles of Mr. White refers to one's "ideal self," whose chronic pursuit is associated with promotion orientation, while the second profile refers to one's "ought self," whose chronic pursuit is associated with prevention orientation (e.g., Brockner et al. 2002). We further elaborate on the relation between the activation-striving model and regulatory focus theory (Higgins 1997) in the general discussion.

After reading about either the "ideal" or the "ought" Mr. White, participants were shown a list of several attributes in which were embedded luxury seeking and frugality. They were asked to rate, on a 7-point Likert scale, how likely each attribute was to be characteristic of "their" Mr. White. It is important to point out that we did not ask participants to evaluate the different attributes relative to specific manifestations of either ideal or ought self but allowed them to reflect on whatever they felt was representative of each of these two domains of the self. The results confirmed that luxury seeking was more strongly associated with an ideal self ($M = 5.50$) than with an ought self ($M = 3.28$; $F(1, 225) = 108.18$, $p < .001$) whereas frugality was more strongly associated with an ought self ($M = 5.45$) than with an ideal self ($M = 3.65$; $F(1, 225) = 71.14$, $p < .001$). Thus, while the degree to which ideal and ought selves are associated with specific personality traits is likely to vary across people and situations, our pretest indicates that, in general, each of these domains of the self tends to be associated with certain traits and not with others.

The results of this pretest provide a foundation for testing the effect of match versus mismatch between the primed content (luxury vs. frugality) and participants' salient self-concept (ideal consistent vs. ought consistent) on the temporal pattern of prime-behavior effects. We begin with such a test in study 1, which we describe next. In study 2, participants' active self-concept is manipulated rather than measured. Both studies 1 and 2 employ an attenuation-escalation paradigm to distinguish between semantic and goal-based construct activation. Further, in study 3, participants' self-discrepancies are measured with respect to a specific attribute, that of physical fitness. The choices made in study 3 are real in terms of their perceived consequences and enable us to test the distinction between goals and semantic con-

structs using the above-mentioned goal satiation paradigm, in addition to temporal escalation.

STUDY 1: THE EFFECT OF SELF-DISCREPANCIES ON SEMANTIC VERSUS GOAL ACTIVATION

The purpose of this study was to test the hypotheses that when the prime is discrepant from people's self-concept (i.e., ideal self with a frugality prime or ought self with a luxury prime), the prime will be more likely to manifest temporal escalation, which is indicative of goal activation. Conversely, when the prime is consistent with people's self-concept (i.e., ideal self with a luxury prime or ought self with a frugality prime), the prime will be more likely to affect behavior in a temporally diminishing pattern, indicative of semantic activation.

Study 1 used a 2 (self-concept: ideal vs. ought) \times 2 (prime: frugality vs. luxury) \times 2 (delay: none vs. 5 minute) between-subjects design. Note that, conceptually, this 2 \times 2 \times 2 design can also be viewed as a 2 (self-prime congruence: congruent vs. incongruent) \times 2 (delay: none vs. 5 minute) design. Our analyses focus on both the full 2 \times 2 \times 2 design and the collapsed 2 \times 2 design.

Method

Pretest of Desirability. As discussed earlier, for primes to be capable of goal activation they need to be perceived not only as self-discrepant but also as desirable end states. A pretest was conducted on the primed concepts (luxury and frugality) to ensure that (1) they were both desirable and (2) the desirability was no different across the two primes, which would have otherwise resulted in a confound. To assess the desirability of the concepts of luxury and frugality, 38 participants (mean age = 32; 68% females) were asked to rate on 7-point scales each of the stimulus words that were used in the luxury and frugality priming conditions on valence (1 = completely negative, 4 = about the same, 7 = completely positive) and importance (1 = not at all important, 4 = neutral, and 7 = extremely important). These ratings were then averaged to yield two scores related to the valence and importance of luxury and frugality. One-sample analyses of these average scores suggested that luxury and frugality were both rated as more positive than the neutral midpoint of the scale ($M = 4.60$; $t(37) = 4.80$, $p < .001$; and $M = 4.49$; $t(37) = 4.32$, $p < .001$, respectively). They were also rated as more important than the neutral midpoint ($M = 4.33$; $t(37) = 2.23$, $p < .05$; and $M = 3.38$; $t(37) = 4.32$, $p < .005$, respectively). Finally, luxury and frugality were rated as equally valenced and equally important (both $t(37) < 1$, NS).

Participants and Procedure. Study 1 had a 2 (prime: frugality vs. luxury) \times 2 (delay: none vs. 5 minute) between-subjects design. The third factor (self-concept: ideal consistent vs. ought consistent) was measured using the Selves Questionnaire (Avnet and Higgins 2006; Brockner

et al. 2002). One hundred and fifty participants (mean age = 31; 64% females) completed a sequence of tasks that were presented to them as unrelated studies run by different researchers. First, they were administered the Selves Questionnaire, which served to measure participants' self-discrepancies from their ought and ideal self-representations. Specifically, participants were asked to list three attributes that were representative of their ideal self and three different attributes representative of their ought self. For each attribute, participants were asked to indicate the extent to which they would like to possess this attribute and the degree they believe they actually possessed this attribute. An ideal-actual discrepancy score and an ought-actual discrepancy score were calculated for each participant.

After the Selves Questionnaire, participants were asked to read an unrelated 1,250-word article about the social behavior of dolphins as part of a filler task, purportedly to evaluate material for future studies. Participants were then asked to perform a sentence unscrambling task, presented to them as a language skills evaluation task, which constituted the priming manipulation. They were given 30 scrambled sentences, 24 of which containing words related either to frugality (e.g., thrift, save) or to luxury (e.g., luxurious, lavish), a procedure adapted from Chartrand et al. (2008). Other than these 24 individual words, the sentences were identical across conditions. After completing the sentence unscrambling task, participants in the immediate (no-delay) condition were presented with the focal choice task. Participants in the delayed condition engaged in a neutral filler task that lasted for 5 minutes. Specifically, in what was described as a memory task, they were presented with a series of 75 consecutive two-digit numbers on the screen, each showing for 4 seconds. Participants were asked to follow the numbers and memorize the highest odd number they saw (which they were eventually asked to report). Following this timed 5-minute filler task, participants were given the same choice task as in the immediate condition. In the choice task (adapted from Chartrand et al. 2008), participants were asked to imagine that they were shopping for new crew socks and to choose between a pair of "Nike Elite" socks at \$5.00 a pair (the luxurious option), and a more economical two-pack of "Hanes Every Day" socks, at \$7.20 for two pairs (the frugal option).

Finally, participants were funnel debriefed. Debriefing revealed that none of the respondents was aware of the primed construct and that none of them thought the sentence unscrambling task was related to the choice task.

Results

Consistent with prior research that used the Selves Questionnaire as a categorical classification tool (e.g., Avnet and Higgins 2006), we considered participants to have a predominantly ought-consistent self-concept if their ought-actual discrepancy score was lower than their ideal-actual discrepancy score, and a predominantly ideal-consistent self-concept if their ideal-actual discrepancy score was lower than their ought-actual discrepancy score.

The results were subject to a 2 (self-concept: ideal consistent vs. ought consistent) \times 2 (prime: frugality vs. luxury) \times 2 (delay: none vs. 5 minute) between-subjects analysis, followed by a conceptually equivalent 2 (self-prime congruence: congruent vs. incongruent) \times 2 (delay: none vs. 5 minute) analysis.

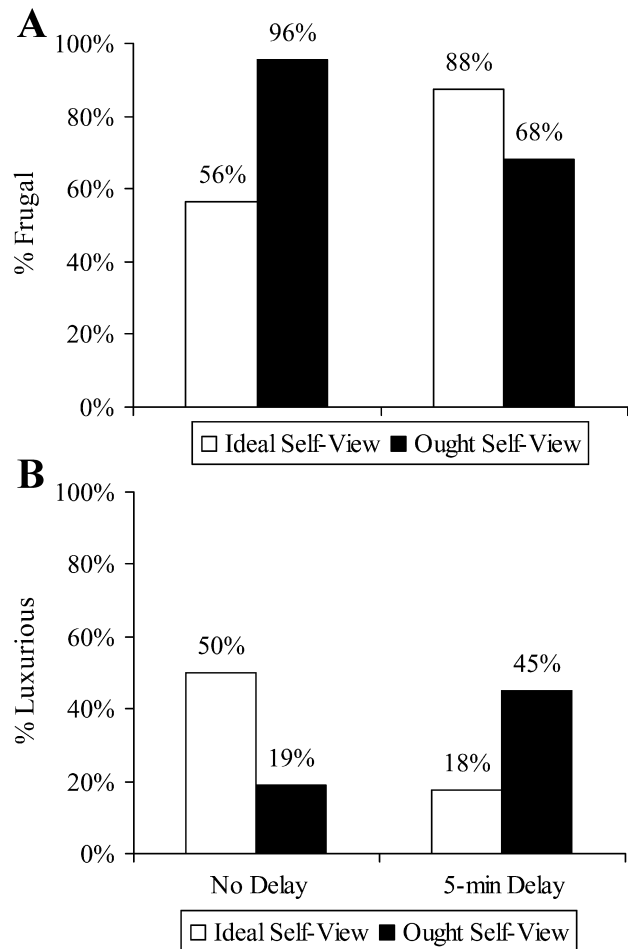
In line with our conceptualization, a logistic regression, with choice as the dependent variable and delay (none vs. 5 minute), prime (frugality vs. luxury), and self-concept (ideal vs. ought) as independent variables, provided good fit ($\chi^2(6) = 2.08$, NS) and revealed the predicted delay by self-concept interaction effect (Wald(1) = 11.49, $p < .001$). The analysis also revealed a main effect of the prime (Wald(1) = 4.42, $p < .05$) indicating that, as conceptualized, individuals primed with luxury were indeed more likely to choose the luxurious option than those primed with frugality. A main effect of the self-concept variable (Wald(1) = 9.60, $p < .005$) indicated that individuals with a salient ought-consistent self-concept were more likely to choose the frugal option than those with a salient ideal-consistent self-concept. The prime variable did not interact with the delay and self-concept variables (Wald(1) $< .1$, NS).

A closer examination of the frugality prime condition (see fig. 2A) suggests that participants with a predominant ideal self-concept (i.e., self-prime inconsistency) were more likely to choose the frugal option after a delay (88%) than immediately after exposure to the prime (56%, $\chi^2(1) = 3.87$, $p < .05$). In contrast, participants with a predominant ought self-concept (i.e., self-prime consistency) were more likely to choose the frugal option immediately (96%) than after a delay (68%, $\chi^2(1) = 5.50$, $p < .05$). In the luxury prime condition (see fig. 2B), participants with a predominant ideal self-concept (i.e., self-prime consistency) were more likely to choose the luxurious option immediately after exposure to the prime (50%) than after a delay (18%, $\chi^2(1) = 3.88$, $p < .05$). However, participants with a predominant ought self-concept (i.e., self-prime inconsistency) were more likely to choose the luxurious option after a delay (45%) than immediately after exposure to the prime (19%). This contrast was marginally significant ($\chi^2(1) = 3.19$, $p < .07$).

To analyze the results in a conceptually equivalent 2 (self-prime congruence: consistent vs. discrepant) \times 2 (delay: none vs. 5 minute) design, the data were collapsed and reanalyzed with the likelihood of making a prime-consistent choice as the dependent variable. Consistent with our conceptualization, a significant delay by self-congruence interaction effect emerged (Wald(1) = 13.11, $p < .001$), indicating that self-consistent primes were more likely to affect choice without a delay (78%) than after a delay (49%, $\chi^2(1) = 7.60$, $p < .01$), whereas self-discrepant primes were more likely to affect choice with a delay (67%) than without a delay (38%, $\chi^2(1) = 6.04$, $p < .05$). No main effects of either delay or self-prime congruence emerged in the analysis.

FIGURE 2

STUDY 1: CHOICE IN FRUGALITY (A) AND LUXURY (B)
PRIME CONDITION



Discussion

The results of study 1 support our conceptualization that when situational primes are consistent with the self-concept they are more likely to affect behavior in a semantic activation pattern (i.e., temporally diminishing), but when they are discrepant from the self-concept they are more likely to affect behavior in a goal activation pattern (i.e., temporally escalating). In this study, ought and ideal self-discrepancies were used as proxies for that part of the self-concept that is either consistent with or discrepant from the primed constructs. A pretest indicated that frugality was strongly associated with an ought self but not with an ideal self, and that luxury was strongly associated with an ideal self but not with an ought self. Accordingly, as predicted we found that people with an ought orientation were more likely to respond to the frugality prime in a temporally diminishing pattern (reflecting semantic activation) and to the luxury prime in a temporally escalating pattern (reflecting goal ac-

tivation). Conversely, as predicted we found that people with an ideal orientation were more likely to respond to the frugality prime in a temporally escalating pattern (reflecting goal activation) and to the luxury prime in a temporally diminishing pattern (reflecting semantic activation).

Note, however, that the self-concept is not a rigid, unchanging construct (Markus and Kunda 1986). Research suggests that the self-concept is malleable to some degree such that distinct self-views can be made accessible by specific situational conditions. Changes in the active self-concept have been shown to moderate the processing of self-compatible versus self-incompatible information (e.g., Aaker and Lee 2001). Likewise, we expect the impact of self-prime discrepancies on prime-behavior effects to be moderated by transient situational conditions that highlight different dimensions of the self-concept. Study 2 was designed to test this proposition and to capture the moderating effect of transient self-concepts on prime-behavior patterns. Specifically, study 2 explores the possibility that the moderating effect of self-prime match versus mismatch holds even when the self-concept is manipulated rather than measured.

STUDY 2: PRIMING SELF-DISCREPANCIES

The purpose of study 2 was to extend study 1 by manipulating, rather than measuring, ought versus ideal self-representations. As in study 1, study 2 used a 2 (self-concept: ideal vs. ought) \times 2 (prime: frugality vs. luxury) \times 2 (delay: none vs. 5 minute) design. Again, we predicted that when the prime is discrepant from people's active self-concept (i.e., an ideal self with a frugality prime or an ought self with a luxury prime), the prime-behavior effect would be more likely to manifest temporal escalation, reflecting goal activation. Conversely, we predicted that when the prime is consistent with people's active self-concept (i.e., an ideal self with a luxury prime or an ought self with a frugality prime), the effect on behavior would manifest in a temporally diminishing pattern, reflecting semantic activation.

Method

Manipulation of the Self-Concept. The Selves Questionnaire was used as a basis for the self-concept manipulation task. However, rather than using the questionnaire to measure participants' discrepancies from their ideal and ought selves, we used the questionnaire instructions to encourage participants to focus on one of the two selves and thereby make that aspect of their self-concept more salient. Specifically, participants in the ought-self condition received the following instructions: "Your ought-self is the type of person you believe you ought to be, the type of person you believe it is your duty, obligation, or responsibility to be. Please take a moment to think about your ought-self. Think about the different attributes you believe it is your duty or

responsibility to have. What would it feel like to be your ought-self? In the next screen you will be asked to write about how it would feel like to have the attributes of your ought-self. Please start by writing a description of your ought-self, and then write how it would be like to become your ought-self." Participants in the ideal-self condition received similar instructions in which the ideal self replaced the ought self, namely, "Your ideal-self is the type of person you ideally would like to be: the type of person you hope, wish, or aspire to be." The remaining instructions were identical, with the necessary substitutions.

Participants and Procedure. Two-hundred and forty participants (mean age = 29; 68% female) were randomly assigned to perform either the ideal-self or ought-self task described above, after which they were assigned to perform the same priming (frugality vs. luxury) and delay (none vs. 5 minute) tasks as in study 1. Finally, participants were asked to choose between a more frugal and a more luxurious Hi-Fi system. The luxurious system (by Bose, \$1,499) was described as having "very small speakers, sleek design, and acoustics that get wows from experts and amateurs alike." The frugal system (Pioneer, \$669) was described as having "larger speakers and acoustics rated favorably by experts in home electronics." Choice on this task, which was adapted from Chartrand et al. (2008), served as the focal dependent variable. Funnel debriefing confirmed that respondents did not link the selves task or the priming task with the choice task.

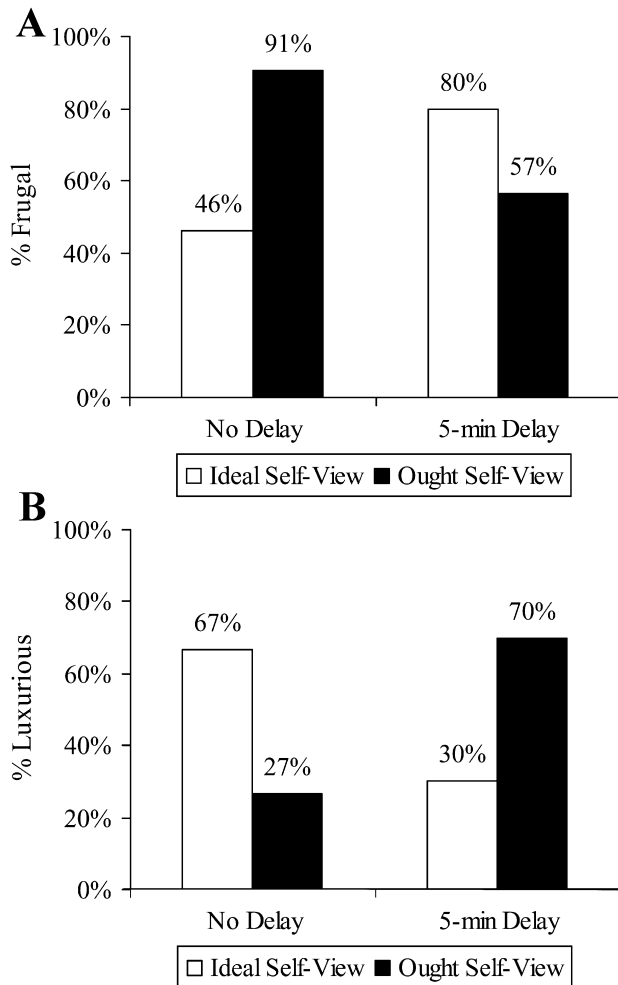
Results

The choice results were subject to a 2 (self-concept: ideal vs. ought) \times 2 (prime: frugality vs. luxury) \times 2 (delay: none vs. 5 minute) logistic regression analysis. In line with our conceptualization, the model provided excellent fit ($\chi^2(6) < .5$, NS), revealing a significant delay by self-view interaction (Wald(1) = 32.15, $p < .001$). A main effect of the prime (Wald(1) = 8.02, $p < .01$) suggested that participants primed with luxury were more likely to select the high price, luxurious option whereas those primed with frugality were more likely to select the low price option. There were no additional significant main effects or interactions.

Next, we examined each of the prime conditions separately. Among participants exposed to the frugality prime, those in the ought-self condition (i.e., self-prime consistency) were more likely to choose the frugal option immediately (91%) than after a delay (57%, $\chi^2(1) = 9.33$, $p < .01$). Participants in the ideal-self condition (i.e., self-prime inconsistency) were more likely to choose the frugal option after a delay (80%) than immediately after exposure to the prime (46%, $\chi^2(1) = 7.07$, $p < .01$). See figure 3A.

Among participants exposed to the luxury prime, those in the ideal-self condition (i.e., self-prime consistency) were more likely to choose the luxurious option immediately after exposure to the prime (67%) than after a delay (30%, $\chi^2(1) = 8.08$, $p < .01$). In contrast, participants in the ought-self condition (i.e., self-prime inconsistency) were more likely

FIGURE 3

STUDY 2: CHOICE IN FRUGALITY (A) AND LUXURY (B)
PRIME CONDITION

to choose the luxurious option after a delay (70%) than immediately after exposure to the prime (27%, $\chi^2(1) = 11.28, p < .001$). See figure 3B.

Discussion

The results of study 2 further support the predictions arising from the activation-striving model. The temporal pattern of the effect of priming on choice was moderated by the match between the primed content and participants' previously activated self-concept. Specifically, self-consistent primes were more likely to affect choice in a semantic activation pattern (i.e., temporally diminishing), but self-inconsistent primes were more likely to affect choice in a goal activation pattern (i.e., temporally escalating).

Although both studies 1 and 2 are supportive of our framework, they nevertheless employ an indirect measure of self-prime congruity. Study 3 was designed to extend these find-

ings by directly measuring participants' perceived self-discrepancies from a specific prime.

STUDY 3: GOAL SATIATION WITH REAL CHOICE

Study 3 contributes to the present investigation in four different ways. First, it extends the findings of studies 1 and 2 by exposing participants to a prime related to physical fitness, rather than frugality or luxury. Second, the dependent variables in this study were real choices rather than hypothetical ones. Specifically, participants chose one of two energy drinks to sample, supposedly as part of market research, and we observed whether they preferred a drink that was said to boost physical stamina or a similar drink said to increase mental acuity. Third, study 3 introduced a goal satiation paradigm, using real choice, in addition to the temporal escalation paradigm used in studies 1 and 2, as a means of distinguishing between goal and semantic activation. Finally, unlike in studies 1 and 2, the priming procedure used in study 3 was subliminal rather than supraliminal, thus bolstering the robustness of our prior findings.

To measure participants' self-discrepancy with respect to the focal construct of physical fitness we adapted a procedure from the Selves Questionnaire. Specifically, participants were presented with a series of personal attributes, including attributes pertaining to physical fitness, and were asked to rate, separately for each attribute, the extent to which they wanted to possess that attribute and the extent to which they felt that they actually possessed that attribute. The difference between the want and actual scores represents the individual-level, attribute-specific self-discrepancy.

Consistent with studies 1 and 2, we predicted that individuals with a larger discrepancy between their actual and desired levels of physical fitness would be more likely, after being primed with words related to fitness, to sample the physical stamina drink after a delay, thus reflecting a goal activation pattern. Conversely, we predicted that individuals with a smaller fitness self-discrepancy would be more likely to select this drink without a delay, thus reflecting a semantic activation pattern.

In addition to the temporal escalation paradigm, this study employed a goal satiation paradigm to add validity to the distinction between goals and semantic construct activation. The logic and operationalization of this paradigm are presented in the next section.

Method

Pretest of Prime Desirability. To assess the desirability of the concept of fitness, 38 participants (mean age = 32; 68% females) were asked to rate, on 7-point scales, each of the stimulus words used in the fitness priming task for valence (1 = completely negative, 4 = neutral, 7 = completely positive) and importance (1 = not at all important, 4 = neutral, and 7 = extremely important). These ratings were then averaged to yield an average importance score

and an average valence score. One-way analyses suggested that fitness was rated as more positive and more important than the neutral midpoint of the scales ($M = 4.96$; $t(37) = 6.99$, $p < .001$; and $M = 4.98$; $t(37) = 7.25$, $p < .001$, respectively).

Participants and Procedure. Participants in study 3 were assigned to a 2 (prime: physical fitness vs. control) \times 2 (delay: none vs. 5 minutes) between-subjects design. The third variable, discrepancies between the self and the concept of physical fitness, was measured rather than manipulated. One hundred and fifty-five participants (mean age = 21; 59% females) completed a sequence of ostensibly unrelated tasks as part of a lab session, in exchange for \$10. First, in what was described as a self-evaluation study, participants were presented with a sequence of 36 personal attributes on a computer screen, one attribute at a time. Out of these 36 attributes, 10 were related to the focal construct of physical fitness (physical strength, body balance, body flexibility, cardiovascular endurance, physical fitness, physical speed, physical stamina, body coordination, body composition, and physical power). The other 26 attributes were fillers (e.g., kindness, generosity). Participants were asked to rate, on a 4-point scale, to what extent they wanted to possess each attribute and to what extent they actually possessed that attribute. A discrepancy score was calculated for each of the 10 fitness attributes by subtracting the actual rating from the desired rating. These discrepancy scores were then averaged, for each participant, to yield an individual self-discrepancy score with respect to the concept of physical fitness (Cronbach's $\alpha = .89$). For participants in the fitness prime condition, this task was administered shortly before the subsequent priming and choice tasks. For participants in the control condition, this task was administered separately, 3 days in advance, to minimize contamination concerns.

The next part of the study was a seemingly unrelated lexical decision task that constituted the subliminal priming manipulation (Bargh and Chartrand 2000). A sequence of 60 words (e.g., lavender, geography) and nonwords (e.g., ank, bonfer) was presented at the center of a computer screen. Participants were asked to indicate, by pressing a key as quickly as possible, whether the stimulus presented was a real word or not. Immediately prior to the appearance of each stimulus word, a prime word was flashed in the center of the screen for 17 milliseconds, sandwiched between two mask strings that also flashed for 17 milliseconds. The 60 prime words were either all related to the concept of physical fitness (e.g., athletic, fit) or neutral (e.g., table, cascade). Each priming condition used 20 different prime words, and each word was shown three times.

Following the priming task, participants in the immediate condition were directed to the first choice task. Participants in the delayed condition were first given a 5-minute delay task, similar to the one used in studies 1 and 2, and only then were directed to the choice task. The first choice was presented to participants as a market research task in which they were to sample one of two tea-based energy drinks and rate them for flavor and overall attractiveness. One energy

drink was said to boost physical stamina whereas the other energy drink was said to promote mental acuity. The drinks were provided at room temperature in two labeled plastic cups, and participants were asked to choose and sample one option. Unbeknownst to the participants, the content of the two cups was identical, consisting of fruit-flavored, caffeine-free herbal tea and sugar. To be consistent with our cover story, participants were asked to rate the sampled drink on several scales.

Following the first choice task, participants were asked to select one of two rewards that they could potentially win in a lottery as a form of additional compensation. The available rewards were either a \$25 REI gift certificate for buying sporting goods or a \$25 Borders gift certificate for buying books. The choices in this final task served as a basis for distinguishing between goal and semantic activation effects in line with the goal satiation paradigm. Specifically, choosing the fitness energy drink in the first task ought to reduce the likelihood of choosing the sports-related gift certificate in the second task—but only among participants in the fitness prime/high discrepancy/delayed condition, where choice of the fitness-enhancing drink in the first choice task was predicted to be driven by the activation of a fitness-related goal rather than semantic knowledge.

Results

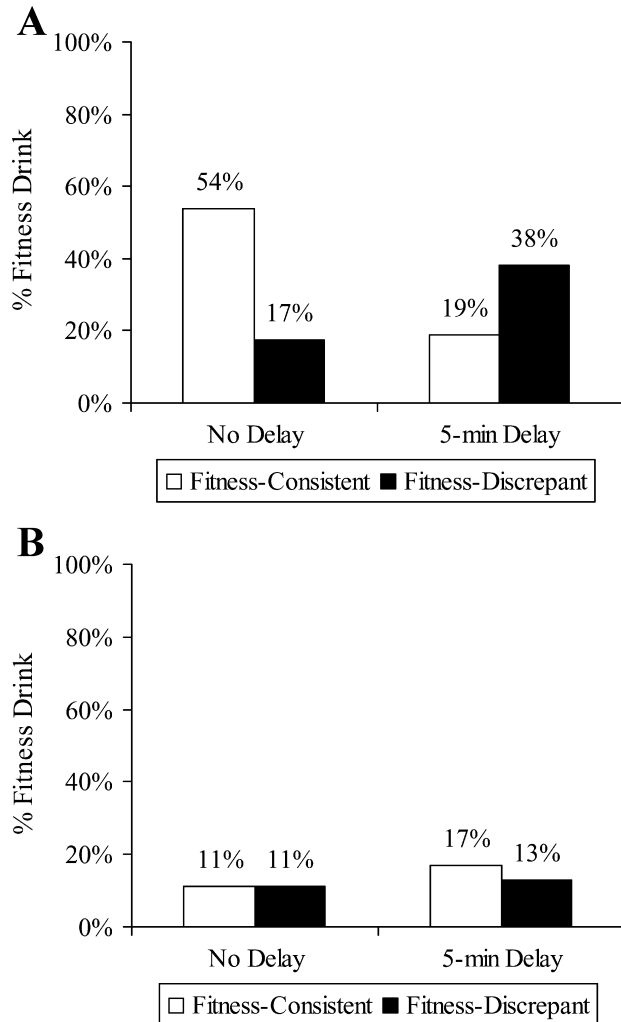
In line with our prediction, a logistic regression with choice of drink as the dependent variable and delay (none vs. 5 minute), prime (fitness vs. control), and self-discrepancy as independent variables, revealed a significant delay by prime by self-discrepancy three-way interaction (Wald(1) = 3.96, $p < .05$), in addition to a delay by self-discrepancy interaction effect (Wald(1) = 3.89, $p < .05$) and a main effect of the prime (Wald(1) = 4.00, $p < .05$). The significant main effect of the prime suggests that participants primed with fitness words were overall more likely to sample the fitness-enhancing drink (28%) than those exposed to the neutral prime (13%).

Focusing just on the fitness prime condition, the data revealed a delay by self-discrepancy interaction effect (Wald(1) = 8.36, $p < .005$). Specifically, in the immediate choice condition, lower discrepancy scores predicted a higher choice likelihood of the fitness drink (Wald(1) = 3.87, $p < .05$). In contrast, in the delayed choice condition, higher discrepancy scores predicted a higher choice likelihood of the fitness drink (Wald(1) = 4.56, $p < .05$). There were no interaction or main effects involving delay or self-discrepancy in the control prime condition (all Wald(1) < 1, NS). See figure 4A and B for a graphic depiction of these results based on a median split of fitness discrepancy scores.

In addition to replicating the findings of studies 1 and 2, study 3 enabled us to distinguish between goal and semantic activation effects using the goal satiation paradigm. Recall that following the initial choice task, participants made a second and purportedly unrelated choice between a gift card for a sporting goods store and that for a bookstore. The prediction was that if participants had been choosing in the

FIGURE 4

STUDY 3: CHOICE OF FITNESS-ENHANCING DRINK
(A, FITNESS PRIME CONDITION; B, CONTROL
PRIME CONDITION)



first task based on an activated fitness-enhancement goal (which, we argue, is likely to have been the case among fitness-discrepant participants in the delayed-choice condition), this goal would have gotten satiated in the first choice task and, thus, decrease the choice likelihood of the sporting goods gift certificate in the second choice task.

The results in the second choice task were consistent with this prediction. Focusing on the fitness prime condition, a logistic regression with second choice as the dependent variable and delay, self-discrepancy, and first choice as independent variables revealed a significant delay by self-discrepancy by first choice three-way interaction (Wald(1) = 4.45, $p < .05$), with no other main effects or interactions (all Wald(1) < 2.3, NS). For ease of exposition, these results are broken down further using a median split of self-dis-

crepancy scores. The analysis suggests that fitness-discrepant participants in the delayed condition, which was the only group for which goal activation was predicted to drive choice in the first task, were less likely to select a sports gift certificate in the second task after having chosen the fitness-enhancing drink in the first task (13%) than after choosing the mental acuity drink (54%, $\chi^2(1) = 3.59$, $p < .06$). Conversely, choice of the gift certificate in all other nongoal conditions was unaffected by the choice of energy drink. Specifically, participants were as likely to select the REI sporting goods gift certificate after having chosen a fitness energy drink (57%) as they were after having chosen the alternative drink (43%, $\chi^2(1) < 1$, NS). Individual contrasts were nonsignificant in all three nongoal groups.

Discussion

Study 3 further supports the hypothesis that whether priming affects behavior through semantic or goal activation is moderated by the degree of congruence between the primed content and the self-concept. Specifically, the prime was again more likely to manifest in choice immediately after exposure when the primed content was relatively self-consistent. In contrast, the same prime was more likely to manifest in choice after a 5-minute delay when the primed content was self-discrepant. The robustness of these findings was bolstered by the fact that study 3 used subliminal rather than supraliminal priming. Furthermore, using real choices rather than hypothetical ones enabled us to employ yet another method for distinguishing between goal and semantic activation, namely, a goal satiation paradigm. Goal satiation was detected only where the activation-striving model predicted goal activation. Specifically, choice in the first task was found to affect choice in the second task only after a delay and only when the prime was self-discrepant.

GENERAL DISCUSSION

Consumers are constantly bombarded with subtle environmental cues. Extensive research from the past 30 years suggests that exposure to such cues can influence judgment, decision making, and other behaviors by activating both semantic and motivational constructs. However, although these different construct types have been associated with distinct behavioral patterns, our ability to predict when a given prime is likely to influence behavior through semantic activation as opposed to goal activation has been rather limited. The present article highlights the moderating role of self-prime congruity in these effects. According to the activation-striving model, priming is more likely to affect behavior through semantic activation when the prime is perceived as reflective of the active self-concept. In contrast, the same prime is more likely to affect behavior through goal activation when the prime is perceived as discrepant from the self-concept. Self-prime congruity is hypothesized to have a dual role in these effects: on the one hand, it moderates the strength of initial associative activation. Prior findings suggest that self-reflective stimuli tend to lead to

stronger associative activation than self-discrepant stimuli, although these effects tend to subside quickly, resulting in a temporally diminishing pattern of effects. Self-prime congruity has opposite implications, on the other hand, in its other role as a moderator of motivational striving. Research suggests that goal activation is contingent on the perception of discrepancies between the activated end state and the state of the self. Thus, while self-discrepant primes may sometimes have a weaker effect on initial associative activation, they are also more likely to instigate motivational striving that may affect behavior in a temporally persistent or escalating pattern.

Although this possibility is not tested directly in this research, our framework also predicts that when the primed concept is both self-reflective and yet discrepant (relative to a salient benchmark), priming effects should manifest in behavior immediately after exposure (due to strong associative activation) and then persist or increase further, over time (due to motivational striving). Such a behavioral pattern is evident in prior research (e.g., Bargh et al. 2001).

Relation to Regulatory Focus Theory

Our use of self-discrepancy measures, in particular in study 1, highlights the relation between the activation-striving model and regulatory focus theory (Higgins 1997), because the Selves Questionnaire is often used as a classification tool for measuring regulatory orientation (e.g., Avnet and Higgins 2006). Specifically, research on regulatory focus has often used the degree of congruence between people's actual selves and their ideal (promotion) and ought (prevention) selves as indicators of their chronic success in the two domains of regulatory focus. Thus, participants are considered to have a chronic prevention orientation if they are predominantly actual-ought congruent and a chronic promotion orientation if they are predominantly actual-ideal congruent.

Interpreting our experimental results in light of regulatory focus theory is consistent with the proposed framework and should be seen as a complementary perspective on the same underlying premise. Specifically, priming is less likely to lead to incremental (i.e., detectable) goal activation effects on behavior when the corresponding regulatory dimension (promotion or prevention) is chronically accessible. For example, priming frugality is less likely to increase frugal behavior via goal activation among prevention-oriented participants (study 1) because, for these individuals, the motivation to pursue prevention-related goals (e.g., frugality) is already accessible. Should any incremental effects of frugality priming emerge among prevention-oriented individuals, the activation-striving model predicts that they are more likely to be mediated by semantic activation. This interpretation is consistent with prior findings suggesting that chronic and temporary sources of semantic accessibility tend to have an additive effect (Bargh et al. 1986) whereas chronic goal accessibility makes it difficult to detect any additional goal activation effects resulting from the prime. For example, Custers and Aarts (2007) found that subliminal

priming of the goal to look well-groomed facilitated instrumental actions among participants for whom the goal was not chronically accessible. Goal priming had a smaller facilitating effect among people who frequently pursued the goal of looking well-groomed and therefore had it chronically accessible. In sum, regulatory focus theory seems consistent with that part of the model relating to goal activation and contributes to understanding the role of self-discrepancies in goal-priming effects.

Questions for Future Research

Our proposed framework argues that priming a self-discrepant concept is likely to lead to goal activation, but one may argue alternatively that a self-discrepant prime should instead work to alter the self-concept itself (cf. Markus and Kunda 1986), making it now more consistent with the prime and, consequently, less likely to lead to goal activation. By a similar token, it may be argued that priming a self-consistent concept is likely to activate goals that are chronically associated with the active self-concept. The behavioral pattern emerging from these predictions is opposite to the results of our experiments. Although existing theories have examined the idea that stereotype and trait priming effects are driven by changes in the active self-concept (Wheeler et al. 2007), the behavioral pattern evident in our studies suggests that such a mechanism may be more characteristic of semantic activation and less characteristic of goal activation. Future research may investigate moderators that influence when and how conceptual priming is likely to affect behavior by altering the self-concept.

Another theoretical question that arises from our research relates to the origin of the self-discrepancy underlying goal activation. One possibility is that priming a concept (e.g., physical fitness) may create a perceived discrepancy between the represented end state (i.e., that of being fit) and the actual state of the self (i.e., being unfit), which the individual is motivated to close. However, it is also possible that the prime activates a representation of self-discrepancy that already exists within the individual. Thus, for example, priming an unfit person with the concept of fitness may trigger the pre-stored "pain" associated with being discrepant from this desirable end state, consequently motivating the individual to move toward the goal. Thus, the first explanation implies that self-discrepancy is being created by means of construct activation, whereas the second explanation implies that a preexisting self-discrepancy is being activated. While both these possibilities seem consistent with the general activation-striving model, future research may help unravel them.

The growing recognition that cues from the environment can have nonconscious behavioral consequences for consumers requires better understanding of when such nonconscious processes influence cognition and behavior and how they interact with other emotional and cognitive components that affect consumer behavior. The findings reported in this research speak to the importance of examining how subtle personal and situational variations can moderate the pro-

cesses that inform nonconscious effects and their tangible consequences for consumer behavior. Several lines of research emerge as promising directions for future work in this area. Continued investigation of the antecedents of goal versus semantic activation processes can contribute to better understanding how nonconscious behavioral effects might actually manifest. For instance, different emotions as well as different levels of cognitive engagement may play differential roles in the activation and adoption of goals, as opposed to semantic constructs. Identifying the unique moderators and boundary conditions associated with goal versus semantic activation processes can further enrich our understanding of when and how such processes are likely to affect consumer behavior. Although recent research has advanced our knowledge of various moderators of priming effects a great deal (see Wheeler and Berger [2007] for an overview), this large body of research has often focused more on overall construct accessibility and less on the distinction between motivational and semantic activation. As a result, we still know little about the extent to which these moderators apply equally to both. The present research makes an important contribution to understanding why nonconscious effects might follow one path rather than the other. This facilitates better understanding of whether, and when, nonconscious primes will influence consumers' behavior in complex and dynamic real world situations.

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