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Nobuyuki Fukawa

Louisiana State University and Agricultural and Mechanical College

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THE EFFECT OF SUPRALIMINAL GOAL PRIMES ON BRAND
PREFERENCE: THE MEDIATING ROLES OF
IMPLICIT AND EXPLICIT ATTITUDES

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Interdepartmental Program
in
Business Administration
(Marketing)

by

Nobuyuki Fukawa
B.A., Hitotsubashi University, 2000
M.M.R., University of Georgia, 2005
December, 2010

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ABSTRACT

The dissertation investigates how supraliminal goal primes affect brand preference through explicit attitude and implicit attitude and whether the effect of supraliminal goal primes and/or mood on brand preference is mediated by cognitive load. Chapter 1 develops a conceptual framework and provides a theoretical background. Chapter 2 investigates how supraliminal goal primes and/or mood affect preference (Study 1), implicit attitude (Study 2) and explicit attitude (Study 3) in the context of luxury vs. frugal brand consumption. Chapter 2 also investigates whether the effect of goal primes and/or mood on preference is mediated by cognitive load. Chapter 3 considers whether, under a high cognitive load, the effect of goal prime and/or mood on preference is mediated by implicit attitude (Study 1) and explicit attitude (Study 2).

CHAPTER 1. ESSAY ONE

1.1 INTRODUCTION

Studies suggest that subtle cues, (e.g., brand names, words associated with a certain goal) embedded in the environment, sometimes trigger an individual's goal non-consciously, thus affecting his or her brand choice (Chartrand, Huber, Shiv, and Tanner, 2008). These subtle cues, often called primes, can affect choice by triggering goals, or by activating associated semantic representations through memory (Sela and Shiv, 2009). In priming goals, both Chartrand et al. (2008) and Sela and Shiv (2009) adapted a supraliminal priming method (Chartrand and Bargh, 1996) involving a scrambled sentence completion task. Although a series of studies by Bargh, as well as other researchers, successfully replicated the effect of goal priming on choice or other behavioral outcomes, other studies (e.g., Nelissen, Dijkster, and Vries, 2005) suggested that goal priming affects choice only under certain conditions. Consistent with this notion, we argue that the effect of goal priming on consumer choice represents a complex process and should be moderated by factors such as cognitive load and consumer's trait.

Most of these studies investigate the relationship between goal priming and behavior or judgment. Yet, we do not have a clear understanding of how goal primes affect behavioral outcomes. Consistent with this notion, researchers call for further research on how goals are non-consciously activated and might guide judgment and behavior (Custers and Aarts, 2007). Understanding this mechanism includes answering the following questions: Does goal priming affect consumer preference with or without changing attitude toward certain objects? Are both explicit attitude and implicit attitude affected by goal priming?

Houwer and Moors (2007) suggested that "it would be interesting to see whether unconscious activation of goals through subliminal priming or scrambled sentence completion has an effect on implicit measures such as the IAT (Implicit Association Test)." Implicit

measures such as the IAT may be useful in understanding the process of how non-conscious goal activation affects behavioral outcomes. Building on the proposition, we may better capture the impact of goal priming by use of the Implicit Association Test. Understanding the effect of goal prime on implicit attitude is important, since as the relationship between goal and attitude is a relatively under-researched area (Freguson and Porter, 2009, p.447).

In Chapter 1, we provide a theoretical framework for the effect of non-conscious goal activation on preference. In Chapter 2, we empirically investigate how a goal prime, cognitive load, and mood may affect preference (Study 1), implicit attitude (Study 2) and explicit attitude (Study 3). Finally, in Chapter 3, we empirically investigate how, under high cognitive load, goal primes and mood may affect implicit attitude and preference, simultaneously (Study 1) and explicit attitude and preference, simultaneously (Study 2). Please see Figure 1.1 for the General Conceptual Model discussed throughout the chapter.

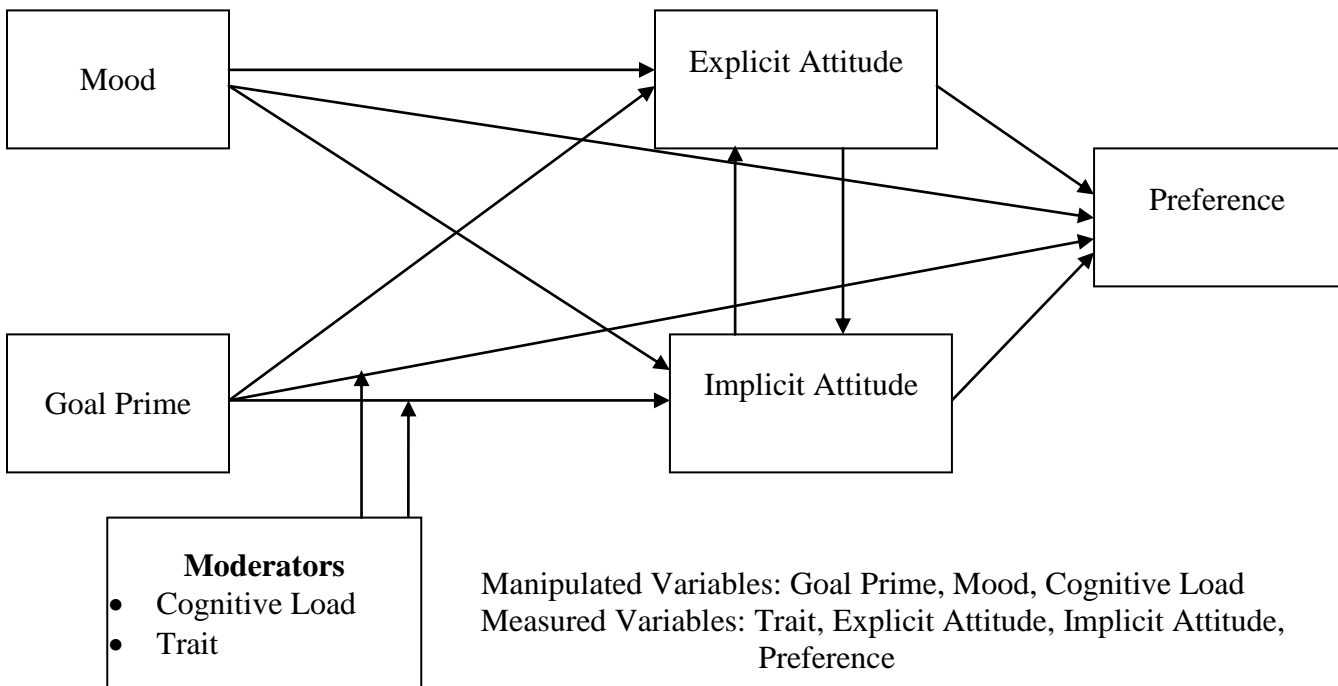


Figure 1.1
General Conceptual Model

In other words, in Chapter 2, we study the effect of goal prime, cognitive load, and mood on each dependent variable (i.e., preference, implicit attitude, and explicit attitude) individually, in the context of consuming luxury and frugal brands. In Chapter 3, we study the effects of goal prime and mood on two pairs of dependent variables (i.e., implicit attitude and preference as well as explicit attitude and preference) simultaneously in the context of wholesome vs. decadent food brand consumption. Thus, the dissertation answers the following questions; (1) When does a supraliminal goal prime facilitate preference consistent with the goal prime? (2) Under what conditions do implicit attitudes mediate the relationship between the goal prime and preference? (3) Under what conditions do explicit attitudes mediate the relationship between the goal prime and preference?

1.2. LITERATURE REVIEW

1.2.1. Defining Non-consciousness

A consumer may choose a brand automatically without much conscious thought. The selected brand may represent his/her favorite brand, or simply be chosen out of habit. Researchers use various terms to describe this kind of behavior, such as automatic choice, nonconscious choice, or unintentional choice. In order to provide specificity to these constructs, Bargh (1994) described the term automaticity from four aspects: unintentionality, unawareness, uncontrollability, and high efficiency. In this study, nonconsciousness means unawareness.

More specifically, an individual can be nonconscious, or unaware of something, in three different ways (Vargas, 2008 and Chartrand, 2005). First, it refers to a situation where stimuli are presented for a brief period of time and an individual is not aware of the stimuli themselves (e.g., subliminal advertisement). Second, an individual is well aware of the stimulus, but is not aware of the automatic cognitive processes. Third, an individual may not be aware of the outcome (e.g., behavior) of the automatic processes.

1.2.2. Non-conscious Goal Pursuit

A goal may be described as cognitive representation that is associated with a desired end state (Shah and Kruglanski, 2003; Kruglanski, et al 2002; Custers and Aarts, 2005). A goal is an important concept in understanding consumer behavior (Mitchell and Zhang, 2005). Goals affect attention (Pieters and Wedel, 2007), impression formation and memory processes (Chartrand and Bargh, 1996), categorization (Poynor and Haws, 2009), persuasion (Chang and Chou, 2008), brand evaluation (Labroo and Lee, 2006), and brand choice (Sela and Shiv, 2009). According to Osselaer et al (2005), consumers pursue three types of goals: (a) consumption goals, associated with consumption benefits such as a tasty and refreshing beverage; (b) criterion goals, associated with one's standard for a satisfying choice, such as maximizing pleasure or explaining your choice to your family or friends; and (c) process goals, such as the avoidance of negative emotions. On one hand, consumers may pursue self-regulating goals, where one has to sacrifice short-term benefits (e.g., eating tasty food) over long-term benefits (e.g., staying fit). On the other hand, consumers may pursue indulgent or hedonic goals, where one may work too hard, thus, may force that consumer to take a trip to a Miami beach over a weekend.

Researchers agree that goals can be activated, processed, and achieved not only consciously, but also non-consciously (e.g., Bargh, 1990). Consistent with this notion, goal systems theory suggests that there are two types of goals, a focal goal (i.e., a goal where one is aware of pursuit), and a background goal (i.e., a goal where one is not aware of the background presence) (Kruglanski et al 2002; Kim and Mitchell, 2008). Background goals reflect an automatic, non-conscious driver that may be explained by the Auto-Motive Model (Bargh, 1990).

1.2.3. Goal and Mood

People tend to approach positive stimuli and avoid negative stimuli. While positive stimuli may induce a positive mood, negative stimuli may induce a negative mood. Thus, an

individual learns that in a positive mood, it is acceptable to approach an object, but in a negative mood, it is better to avoid that object. That is why Fishbach and Labroo (2007) asserted that, similar to the mood as an information approach (e.g., Schwarz and Clore, 2003), people associate positive affect and approach tendency, as well as negative affect and avoidance tendency. Although an individual does not use mood as information, when he or she attributes mood to non-target objects (e.g., Schwarz and Clore, 2003), we believe that after non-conscious goal activation and a masked mood manipulation task, it is less likely that an individual consciously attributes his/her mood to an irrelevant object. In other words, in non-conscious goal activation, an individual is less likely to attribute his/her current mood to an object that is not in context.

1.2.4. Explicit Attitude vs. Implicit Attitude

Implicit attitudes are evaluations that are (a) based on an unknown origin, (b) automatically activated, and (c) result in uncontrollable outcomes (i.e., out of one's control, either despite the individual's intention to control, or simply because an individual does not view the outcome as originating from his/her attitude and does not intend to control it) (Greenwald and Banaji, 1995, Wilson, Lindsey and Schooler, 2000). While explicit attitudes are influenced by conscious processing, such as conscious adjustment, implicit attitudes are believed to be influenced by unconscious processing (Perkins, Forehand, Greenwald, and Maison, 2008, p. 464). Thus, researchers find dissociations between explicit attitudes (e.g., self-reported attitude measures) and implicit attitudes (e.g., indirect attitude measures).

Explicit attitude measures and implicit attitude measures are sometimes highly correlated and other times completely unrelated (Hofmann, Gawronski, Gschwendner, Le and Schmitt, 2005). Thus, some studies assert that the extent of association between explicit attitude and implicit attitude depends on several factors that include (a) self-presentation, (b) evaluative strength, and (c) dimensionality. According to Nosek (2005), first, when one's self-presentation

concern is high, explicit attitude may be altered in order for others in society to better accept the response of the individual, while implicit attitude should be free from any deliberate alteration of attitude. Thus, a high self-presentation concern should result in low implicit and explicit attitude correspondence. Second, a personally important and familiar evaluation (i.e., high evaluative strength) should result in a stronger association between implicit and explicit attitude, than a personally unimportant, unfamiliar evaluation. Third, for those concepts that fit a bipolar structure, an individual should find it relatively easier to retrieve (i.e., an almost automatic retrieval) and form an evaluation, than for those with unipolar structure. Thus, a simple, bipolar structure of concepts should result in a stronger association between explicit and implicit attitude, than those with a unipolar structure of concepts.

1.2.5. Explicit vs. Implicit Attitude as Predictor of Food Preference

Researchers have studied the predictive ability of the IAT compared to explicit attitude measures, regarding food choices with mixed empirical results. Karpinski and Hilton (2001) found no correlation between IAT and explicit attitude measures towards snacks versus fruits. In the study, where explicit attitude measures predicted behavior (i.e., an actual choice between a Snickers candy bar and a Red Delicious Apple), the IAT did not predict behavior.

Similarly, Perugini (2005) studied preferences for snacks versus fruit. In the study, the IAT successfully predicted “spontaneous” behavior (i.e., actual choice between snacks and fruit). Then, explicit attitude predicted “deliberative” behavior, using self-reported measures, such as “[T]o what extent would you describe yourself as a person who regularly eats snacks (fruits)?” The correlation between explicit attitude measures and the IAT was not significant ($r = .09$).

Roefs and Jansen (2002) studied implicit and explicit attitude towards high-fat vs. low-fat foods. Interestingly, the finding noted that obese people carry a negative, implicit attitude

towards high-fat food. Thus, while obese people like the taste of high-fat foods and tend to eat those foods frequently, they tend to carry a negative, implicit attitude toward these high-fat foods.

More recently, Craeynest et al. (2008) studied attitude changes towards food and exercise among young, obese people, who successfully lost weight. The study tested whether an implicit attitude or an explicit attitude toward food and exercise changed before and after the weight loss. The study found no major attitude change, either explicit or implicit, to explain the successful weight loss. Thus, researchers find mixed results in terms of whether explicit and implicit attitude are correlated, and whether explicit and implicit attitudes predict preference and choice behavior differently.

1.2.6. Semantic Activation vs. Goal Activation

Dijksterhuis and Bargh (2001) investigated whether priming leads to semantic activation or goal activation. The researchers assumed that, whereas semantic activation decays after a delay (e.g., 5 minutes), goal activation increases overtime, until the goal is attained. The study found that the effect of priming on a perception-related task, which should be mediated by semantic activation, disappeared after a five-minute delay. Then, the effect of priming on a behavior-related task, mediated by goal activation, increased after a five-minute delay.

This view is consistent with the activation-striving model (Sela and Shiv, 2009), which proposes that the effect of primes on behavior diminishes over time when mediated by semantic activation, given trait-consistent primes. On the other hand, whereas the effect of primes on behavior persists over time when a goal is activated, given trait-inconsistent primes. In other words, semantic activation is enhanced by trait-consistent primes, whereas goal activation is facilitated by trait-inconsistent primes (e.g., Sela and Shiv, 2009). The former may be explained by the self-schema matching paradigm (Markus and Wurf, 1987). According to the paradigm, an individual pays more attention, processes with greater intensity, and favors trait-consistent

information. This greater intensity in processing trait-consistent information than self-inconsistent information leads to semantic activation.

Conversely, trait-inconsistent primes tend to highlight the gap between one's current state and ideal state, when the primes are perceived as positive and desired. As previously reviewed, this approach tendency for positive stimuli in achieving the goal may be extended to an approach tendency, when an individual is in a positive mood. This approach tendency for positive stimuli or for an individual in a positive mood should be observed for goal-activation, rather than for semantic activation.

1.2.7. Goals and Attitudes

Fiske (1992) asserts that an individual's goal shapes not only how he or she acts to achieve his or her goal, but also how he or she thinks. Apart from the view that considers cognition and motivation to be two separate systems, Fiske's (1992) argument is consistent with the theory of goal systems, where motivation is viewed as part of cognition (Kruglanski et al., 2002). This perspective is a theoretical foundation of the relationship between goals and attitudes.

Ferguson and Bargh (2004) found that pursuit of a certain goal affects the automatic evaluation of an object that is strongly linked with the goal in memory, but does not affect explicit attitude (See also Ferguson and Porter, 2009, pp. 465-466, for a recent review on this topic). As an individual's goal is activated, the accessibility of that goal and a goal-relevant object useful to achieve that goal should increase (Kruglanski et al., 2002). This increased accessibility of the goal-relevant object should result in a more positive evaluation of that object. Ferguson and Bargh (2004) argued that an individual can efficiently assess the valence of the attitude object efficiently, with automatic evaluation alone. This positive automatic evaluation of the goal-relevant object should increase the approach tendency of the goal, thereby encouraging the goal-consistent behavior.

Recently, Ferguson (2008) replicated the effect of goal activation on an implicit attitude in the context of non-conscious goal activation. In the studies, after completion of a scrambled sentence task, participants evaluated the valence of subliminally presented objects, with some goal-relevant, while others were goal-irrelevant. As these attitudes were generated with no awareness toward those targets, these evaluations were considered to be implicit attitudes.

1.3. THEORETICAL BACKGROUND

1.3.1. Auto-Motive Model

The Auto-Motive Model (Bargh, 1990) suggested that goals may be activated automatically and may affect processing and behavior outside of one's consciousness. According to the model, situational cues can activate goals automatically in three ways. First, general situational features of a common event may activate associated goals and motives. For instance, when an individual encounters situational features of a common event (e.g., a restaurant), he or she may pre-consciously activate associated goals and motives (e.g., eating at a restaurant). These situational features of common events that take place frequently in one's daily life are often linked to a single representation (e.g., associated goal and motive). Kahneman (1973) mentions the possibility of non-conscious control in constructing responses for simple tasks. Kahneman (1973) argues that an individual can form a response to a simple task without interpreting the meaning of selected objects. Second, situational cues can automatically activate social or cultural norms. Then, once triggered, these norms activate associated goals and intentions, thus leading to behavior considered to be a norm in the society or culture. Third, an individual may perceive the goals of other people, which may trigger the goal of the individual (i.e., a reactive goal). The third process of automatic goal activation differs from the first two processes in that behavioral features, not situational features, trigger the activation process.

Bargh (1990, p. 103) noted that other researchers, such as Norman and Shallice (1986), also developed a model to explain the links between goals and environmental cues. The model of Norman and Shallice (1986) indicates how some behaviors may become automatic as a result of frequent learning processes, thereby needing little attention or intention (e.g., a bus driver becomes so accustomed to pulling over at a bus stop that he non-consciously repeats the action when he or she drives the family car).

Instead, the auto-motive model suggests that higher-order goals or motivational properties themselves can be automatically activated to guide actions. The auto-motive model assumes that situational cues can automatically trigger one's goal, which in turn activates associated plans and intentions that lead to certain behaviors. Bargh (1990) argued that this process can happen without an individual's consciousness. In other words, an individual may not be aware that his or her perception, judgment, and behavior are affected by automatically triggered goals. Thus, whereas Norman and Shallice's (1986) model suggested that environmental cues can trigger well-learned automatic behavior without attention or intention, the auto-motive model suggests that environmental cues can activate a goal or intention, to guide actions. Bargh and Pratto (1986) claimed that these environmental cues affect people's cognitive processes, regardless of their intentions. Similarly, Moskowitz, Li, and Kirk (2004) discussed the possibility of a non-conscious goal-pursuit, despite a conscious withdrawal from pursuing the goal (i.e., implicit volition).

1.3.2 Dual Process Models

1.3.2.1 MODE Model

Attitude may be defined as an "association in memory between an object and one's evaluation of it (Olson and Fazio, 2009; Fazio, 2007)." The motivation and opportunity as determinants (MODE) model assumes the existence of two types of attitude-to-behavior

processes: a spontaneous, attitude-behavior process that involves “a spontaneous reaction to one’s perception of the immediate situation,” as well as deliberate, attitude-behavior processes that involve “deliberation regarding the behavioral alternatives.” The model attempts to integrate two different models of attitudes: one that deals with automatic attitude-behavior processes (e.g., Fazio, 1986), and another that assumes deliberative attitude-behavior processes (e.g., theory of reasoned action by Ajzen and Fishbein, 1980). The MODE model offers insights on how attitude guides behavior by incorporating motivation and opportunity as two moderators of attitude-behavior processes. According to the MODE Model, when people have neither the opportunity nor motivation to foresee the consequences of their actions, automatically activated attitudes will guide their behaviors (Fazio, 1990; Gibson, 2008). In other words, only when sufficient opportunity and motivation are available, does an individual engage in deliberative processes.

The MODE model distinguishes itself from other attitude models such as elaboration likelihood model (Petty and Cacioppo, 1986) or heuristic-systematic model (Chaiken, Liberman, and Eagly, 1989), by employing a relatively broad definition of opportunity and motivation. In the MODE model, opportunity refers to the availability of various resources to process information, such as time and other cognitive factors; motivation refers to the level of effort an individual makes in order to reach a conclusion that affects behaviors and judgments, regardless of the conclusion. For instance, an individual may want to make the right decision or want his/her behavior to be accepted by a society. Unlike other attitude models that consider the level of accuracy to be the main motivational factor, the MODE model considers all efforts to be motivational factors.

Thus, the MODE model assumes four different situations, determined by the level of opportunity and motivation. As drawn in Figure 1.2, these four situations are (a) low motivation and low opportunity, (b) low motivation and high opportunity, (c) high motivation and low

opportunity, and (d) high motivation and high opportunity (Please see Figure 1.2 and also see Olson and Fazio (2009) for a comprehensive review). According to the model, motivation allows for the possibility of deliberative attitude-behavior processes; opportunity serves as a gate that determines whether the deliberative process initiated by high motivation affects judgment or behavior. Low opportunity (e.g., an individual does not have enough time to make a choice) closes the path of this deliberative process, such that automatically activated attitudes will guide judgment or behavior (high motivation and low opportunity condition). However, high opportunity allows the deliberative process initiated by high motivation to affect judgment and behavior (high motivation and high opportunity condition). When motivation is low, an automatically activated attitude guides behavior and judgment, regardless of the opportunity (low motivation and low opportunity condition or low motivation and high opportunity condition).

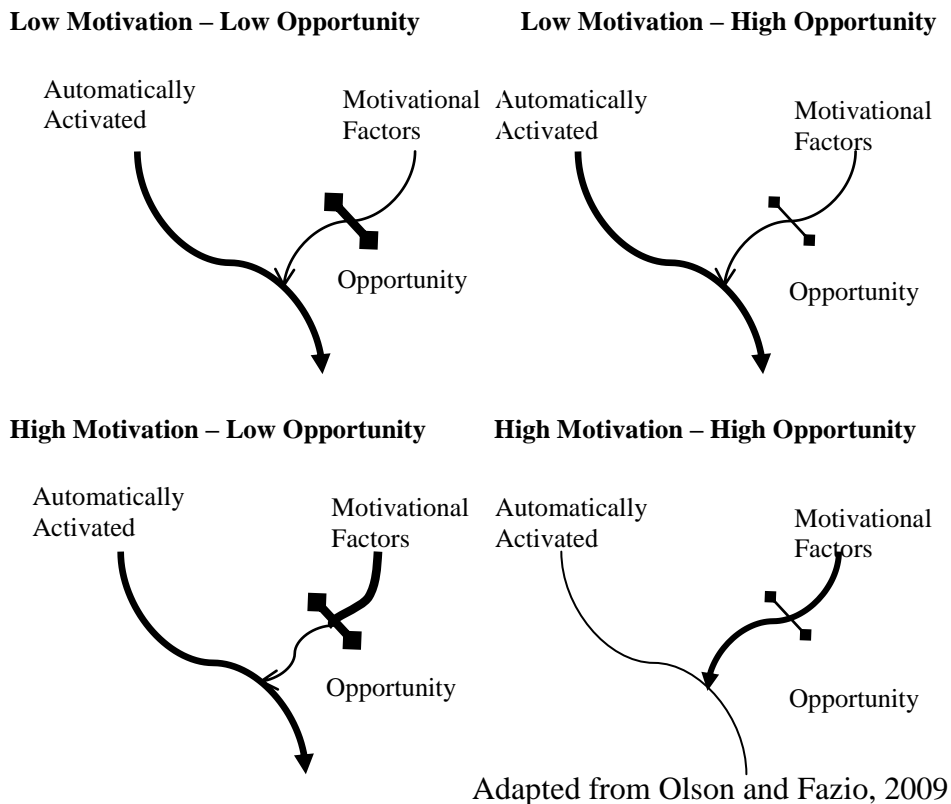


Figure 1.2
The MODE Model

1.3.2.2 Recent Dual Process Model

Recently, Dijksterhuis and Nordgren (2006) introduced the unconscious thought theory, proposing two types of thoughts, conscious and unconscious. The researchers defined conscious thought as “object-relevant or task-relevant cognitive or affective thought processes that occur while the object or task is the focus of one’s conscious attention,” and unconscious thought as “object-relevant or task-relevant cognitive or affective thought processes that occur while conscious attention is directed elsewhere.” The theory proposes that the following three principles, among others, determine the relative applicability of either conscious thought or unconscious thought in constructing outcomes (e.g., making decisions). The capacity principle states that unconscious thought enjoys a large capacity, thus allowing more information to be considered, whereas conscious thought suffers from low capacity constraints. The weighting principle states that unconscious thought typically employs consistent weighting, leading to a satisfactory choice, whereas conscious thought suffers from noise in weighting, often resulting in relatively low satisfaction for one’s choice. The rule principle states that conscious thought is better at precisely following rules than unconscious thought, which follows a rule roughly (e.g., only capable of giving rough estimates for a certain calculation).

1.3.3. Mood as Information Model

Schwarz (1990) proposed that an individual use one’s affective state as a source of information in evaluating an object, by asking “how do I feel about it?” According to the model, a positive, affective state informs an individual that he or she is in a safe environment, while a negative, affective state alerts an individual that he or she is in a problematic environment. Sometimes, an individual misattributes a feeling to be a response toward a given object; this results in a more favorable response in a positive, affective state, rather than in a negative, affective state. Unlike other models (e.g., affect infusion model by Forgas (1995)), this

attribution can happen beyond one's consciousness (Schwarz and Clore 2003). The "how do I feel about it?" heuristic simplifies judgment, because he or she can evaluate the object without evaluating the detailed features of the given object. Thus, in a situation where one's cognitive capacity is limited (e.g., under time pressure, or the complex judgment task), an individual may rely more on his or her affective state to construct an evaluation toward an object (Schwarz, 1990).

However, an individual may not use his or her affective state to evaluate an object, when his or her current affective state is irrelevant to the given object (Schwarz and Clore 2003). For instance, when a person is aware that a previous event has induced the current affective state, the individual may realize that the object was irrelevant and therefore did not affect his or her current affective state, in which case the affective state would not influence the evaluation of the object.

1.3.4 Self-Schema Matching Paradigm

A self-schema is a generalized view of the self and is derived from one's prior experience and stored in memory (Markus and Wurf, 1987). A self-schema is believed to affect one's attention, encoding, and retrieval of the information used to guide one's behavior (Wheeler, Petty, and Bizer, 2005; Markus and Wurf, 1987). For instance, based on past social experiences (e.g., interaction with other people), an individual may consider himself/herself an introvert or an extrovert. For example, a self-concept as an introvert may lead an individual to decline an invitation to a party, because the schema facilitates the prediction that he or she would be uncomfortable at the party when interacting with other people.

The self-schema matching paradigm suggests that an individual favors a message or a product that is consistent with his or her self-schema (Wheeler et al. 2005). Cacioppo, Petty, and Sidera (1982) found that an individual has a favorable attitude toward a message that is relevant

to his/her self-schema, when compared to another, equally persuasive, message less relevant to his/her self-schema.

1.3.5. Theory of Goal Systems

Some researchers (e.g., Bem, 1972) viewed motivation and cognition as two separate systems. For instance, the self-perception theory (Bem 1972), asserts that individuals come to understand their own attitudes through observing themselves. Thus, the self-perception theory explains an attitude change from a cognitive perspective. However, other explanations of attitude change employ a motivational approach, such as cognitive dissonance theory. When motivation and cognition are considered to be two separate systems, motivation is thought to select the mode of persuasion. For example, one system requires more effort (e.g., a central route) and the other system requires less effort, relying on heuristic cues (e.g., a peripheral route) (See Kruglanski et al. 2002 for review).

In contrast, the theory of goal systems proposes that motivation and cognition are not separate systems. That is, the motivational process consists of cognitive properties that partly determine which goal concepts are triggered (Kruglanski et al. 2002). Thus, the theory explains goal concepts as “knowledge structures governed by cognitive principles” (Kruglanski et al. 2005). In other words, the theory assumes that the motivational process can be a less effortful, automatic, and dynamic process rather than a static, effortful process. For instance, people may shift their attentions from one task (e.g., writing a paper) to another (e.g., checking e-mail), and another (e.g., going to a refrigerator to find a snack); each task can be considered a motivational phenomena with its own goal (e.g., getting a publication, communicating with someone, and fulfilling one’s hunger, respectively). Kruglanski et al. (2002) claimed that if motivation is considered a part of a cognitive system, we should be able to better understand this dynamic process. In cognitive systems, one cue may activate another cue (e.g., associative network

model). As a result, the theory explains goal systems as networks of mental representations, where goals and means are cognitively associated with one another. In other words, the theory considers goals and means to be mental representations in an associative network, which may be activated. Although the theory of goal systems (Kruglanski et al. 2005) distinguishes goal activation from semantic activation, thus suggesting that goals are triggered by the “active pursuit of goals via particular means,” other researchers noted conversely that semantic associations between goals and means are thought to be passive and without motivational properties (c.f., Sela and Shiv, 2009).

CHAPTER 2. ESSAY TWO

2.1. INTRODUCTION

In Chapter 2, we investigate when supraliminal goal priming facilitates a goal consistent (inconsistent) preference, through analyzing possible moderators such as traits (i.e., materialism) and cognitive load (Study 1). Then, prior to testing the mediating roles of implicit attitude and explicit attitude in Chapter 3, we study whether the goal primes and mood effect implicit attitude (Study 2) and explicit attitude (Study 3) by applying the same potential moderators of materialism and cognitive load.

These studies will be tested in frugal and luxury brand consumption contexts. Even during the present recession, many consumers have difficulty controlling their spending. Sherman (2009) noted that on the average, Americans spend more than they earn. Yet, frugality, a consumer trait, was neglected in scholarly consumer behavior literature (Lastovicka, Bettencourt, Hughner, and Kuntze, 1999). Lastovicka et al. (1999) defined frugality as a consumer lifestyle characteristic, associated with future goal orientation, in practicing restraint in acquiring and consuming economic goods and services. Frugality seems critical for societal well-being by reducing consumers who are in debt. Yet, wealthy consumers remain conservative on their spending behaviors, while global sales of luxury goods declined by 7% in 2009. Thus, the promotion of luxury and indulgent goals for wealthy consumers becomes critical in stimulating today's economy.

How might we promote goals that are sometimes inconsistent with consumers' lifestyle or traits? The idea of non-conscious goal pursuit provides a possible solution. Bargh (1990) argued that a certain environmental cue activates an individual's goal, triggering both intentions and plans, and facilitating goal-consistent behavior, all of which happens beyond an individual's consciousness. The entire process can happen non-consciously, regardless of a conscious

intention. Thus, despite consumer intention, we promote frugal spending behavior toward those consumers who have a tendency to over-spend, as well as promote indulgent spending behavior towards wealthy consumers, who psychologically minimize spending during the economic turn-down.

2.2. CONSTRUCT DEFINITIONS

2.2.1. Goal Prime

A goal prime is associated with the non-conscious activation of a cognitive structure, inclusive of the ideal state that an individual may wish to achieve, and a means to reach that state, with associated information (Laran, Jeniszewski, and Cunha Jr., 2008, Kruglanski et al. 2002, Shah and Kruglanski, 2003; Custers and Aarts, 2005). The study employed two types of goal primes: a luxury or a frugal goal prime. A frugal goal mirrors consumer lifestyle characteristics, associated with future goal orientation, to produce restraint in acquiring and consuming economic goods and services (Lastovicka et al, 1999). Conversely, a luxury goal is associated with a materialistic, consumer lifestyle, where owning material goods is considered a crucial life objective (Richins, 2004; Richins and Dawson, 1992).

2.2.2. Mood

Mood is a relatively long-lasting, general affective state that targets no specific referent (Linnenbrink and Pintrich, 2004, p.58). This study examines two types of mood, based on valence – a positive mood vs. a negative mood. A positive mood includes such affective states as happy, pleased, and satisfied. A negative mood includes such affective states as unhappy, sad, or nervous (see Watson and Tellegen, 1985, for a detailed description of mood structure).

2.2.3. Cognitive Load

Cognitive load is associated with the use of working memory, where task related information is maintained while conducting a certain task (Shah and Miyake, 1999).

2.2.4. Implicit Attitude

Implicit attitudes are evaluations that are (a) formed from an origin of which an individual is not aware, (b) automatically activated, and (c) results in uncontrollable outcomes (Greenwald and Banaji, 1995, Wilson, Lindsey and Schooler, 2000).

2.2.5. Explicit Attitude

An explicit attitude may be defined as conscious evaluative judgments about a certain object with a known origin (Gawronski and Bodenhausen, 2006).

2.2.6. Preference

Preference represents the degree that an individual likes one alternative more than another (Merriam-Webster, 2010). Whereas choice is discrete (e.g., a choice of one brand over another), preference is associated with the extent to which an individual likes one brand more than another brand.

2.2.7. Materialism

Materialism is associated with a consumer lifestyle, where owning material goods may be considered a crucial life objective (Richins, 2004; Richins and Dawson, 1992).

2.2.8. Category Combination

In this study, a category combination refers to alternative combinations of categories in the Implicit Association Test. One may combine luxury and positive (on the left) and frugal and negative (on the right) in Blocks 3 & 4, and then frugal and positive (on the left) and luxury and negative (on the right) in Blocks 6 & 7 for combination 1. Another alternative is to combine frugal and positive (on the left) and luxury and negative (on the right) in Blocks 3 & 4, and then luxury and positive (on the left) and frugal and negative (on the right) in Blocks 6 & 7 for combination 2.

2.3. HYPOTHESES

2.3.1. Study 1: Effect of Goal on Preference

2.3.1.1. Hypothesis 1 (Effect of Goal on Brand Preference in High Load Condition)

The automotive model (Bargh, 1990) suggested that environmental features not only activate people's goals, but guide people's cognition and behavior without their awareness. The model suggests that associative links are created in memory between goals and related environmental features, following frequent and consistent association between the two. That is why the activation of environmental cues can automatically activate relevant goals, intentions, and plans. Since what one attempts to achieve may guide how one sees, thinks about, and acts on goal-relevant objects, research finds that goals often determine perception, cognition, and behavior (Bargh, 1990, Neisser, 1967). Thus, a supraliminal goal prime should first activate relevant goals (frugal or luxury) and thereby guide preferences to frugal or luxury brands. Prime words associated with either frugal or luxury goals should activate related concepts, eventually leading to higher order goals. As the accessibility of the goals (frugal/luxury) increases, the preference for frugal or luxury brands should increase, resulting in a goal of prime-consistent preference (Please see Figure 2.1).

The MODE model suggests that when an individual has little opportunity, an individual is more likely to follow an automatic attitude-behavior process, regardless of motivation. Thus, when the availability of cognitive resources is limited (i.e., a high cognitive load condition), an individual tends to follow automatic attitude-behavior processes. The term, cognitive resources, represents the availability of a working memory. Working memory refers to a system where task-related information is maintained while conducting a cognitive task (Shah and Miyake, 1999). In order to perform a certain task, working memory requires a certain amount of resource, which is associated with cognitive load (Barrouillet, Bernardin, Portrat, Vergauwe, and Camos

2007). Therefore, an automatically activated goal may guide one's brand preference, when the availability of cognitive resources is limited. Thus,

H1: Under a high cognitive load, consumers prefer brands consistent with the goal prime, regardless of consumer materialism.

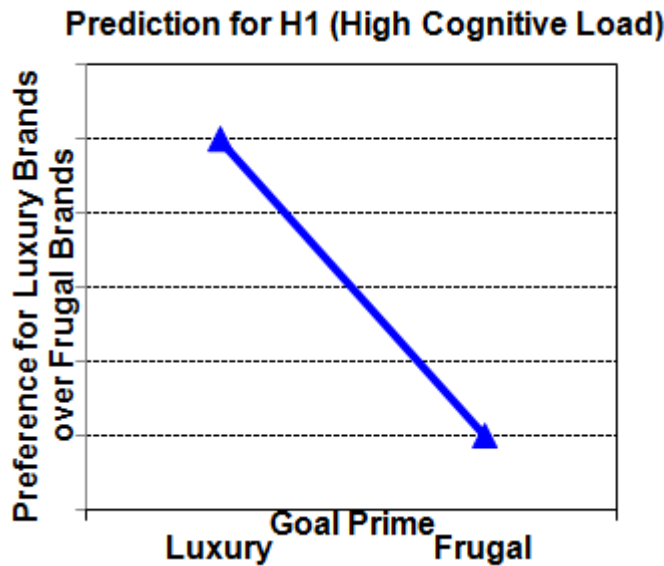


Figure 2.1
PREDICTION FOR H1

2.3.1.2. Hypothesis 2 (Effect of Goal on Brand Preference in Low Load Condition)

The MODE model suggests that under a high opportunity condition (i.e., a low cognitive load), an individual tends to take deliberative processes when that individual has a high motivation. Thus, under a low cognitive load, an individual should take deliberative processes when he or she has a high materialism. For an individual with higher materialism, the consequence of brand preference between a frugal and a luxury brand should become more important than for those with less materialism. Thus, a person with high materialism should have a higher motivation than one with low materialism. In such a deliberative process, the goal prime should not affect preference. Please see Figure 2.2. for prediction. The MODE model also suggests that under a high opportunity condition (i.e., low cognitive load), an individual tends to

take relatively automatic processes, when an individual has low motivation (e.g., less materialism). The goal prime should affect preference under automatic processing, rather than under deliberative processing. Thus, under high opportunity (i.e., a load cognitive load) and low motivation (i.e., a low materialism), an automatically activated goal should guide choice, resulting in a preference consistent with the goal prime. Therefore,

H2. Under a low cognitive load, (a) consumers low in materialism prefer brands consistent with the goal prime, whereas (b) brand preference is unaffected by the goal prime for consumers high in materialism.

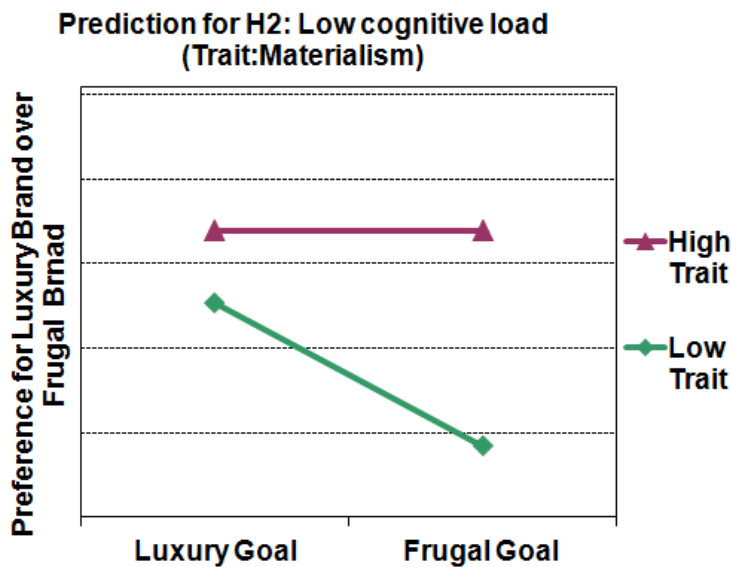


Figure 2.2
PREDICTION FOR H2

2.3.1.3. Hypothesis 3 (Semantic-cue activation vs. Goal Activation Explanations)

The preference task in the study is hypothetical and not an actual choice. Thus, when the prime (luxury vs. frugal) is successfully priming a goal, an individual’s gap between the ideal state and the current state should remain the same with no satiation effect. Merely preferring one luxury brand to another frugal brand does not help an individual to achieve a luxury goal. However, when the goal prime is activating prime-related cues in associative networks, rather

than as a goal, the trend for prime-consistent preference should diminish over time, due to a decay of prime-related cues within associative networks.

Thus, we have two competing explanations for the effect of goal prime on preference. If the goal prime is actually activating a goal, the effect of the prime should not be affected by repeated preference measures. Alternatively, if the prime is activating prime-related semantic cues, the effect of the goal prime should diminish over time, thus the effect of the prime should be affected by repeated preference measures (Please see Figure 2.3 for prediction). Thus, the two competing hypotheses are;

H3: Under a high cognitive load, consumers prefer brands consistent with the goal prime, such that (a, goal activation explanation) the effect is unaffected by repeated preference measures over time, or (b, semantic-cue activation explanation) the effect diminishes with repeated preference measures over time.

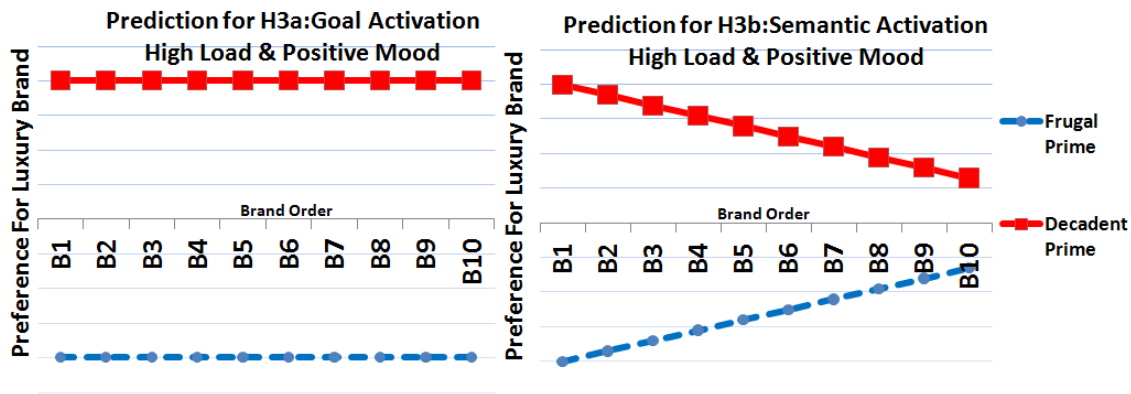


Figure 2.3
PREDICTION FOR H3

2.3.1.4. Hypothesis 4 (Effects of Mood on Preference)

Studies suggest that an individual in a negative mood often lacks self-control, and abandons healthy behavior or frugal spending behavior, as negative moods induce self-defeating motivations (Tice, Bratslavsky, and Baumeister, 2001). Leith and Baumeister (1996) suggested that this is because individuals in negative moods tend to take riskier behaviors than those in

positive moods, hoping for a significant, immediate outcome (e.g., eating unhealthy, tasty food, hoping to improve one's mood), but often resulting in a costly, long-term outcome (e.g., becoming unhealthy).

Thus, an individual in a negative mood, as a result of a lack of self-control, may prefer luxury brands to frugal brands, more than an individual in a positive mood (Please see Figure 2.4 for prediction). This is because an individual in a negative mood, instead of a positive mood, often fails to resist the temptation of immediate rewards (i.e., feeling better by purchasing luxury brands, rather than frugal brands) and thereby sacrifices the long-term benefit (i.e., saving money by purchasing frugal brands, instead of luxury brands).

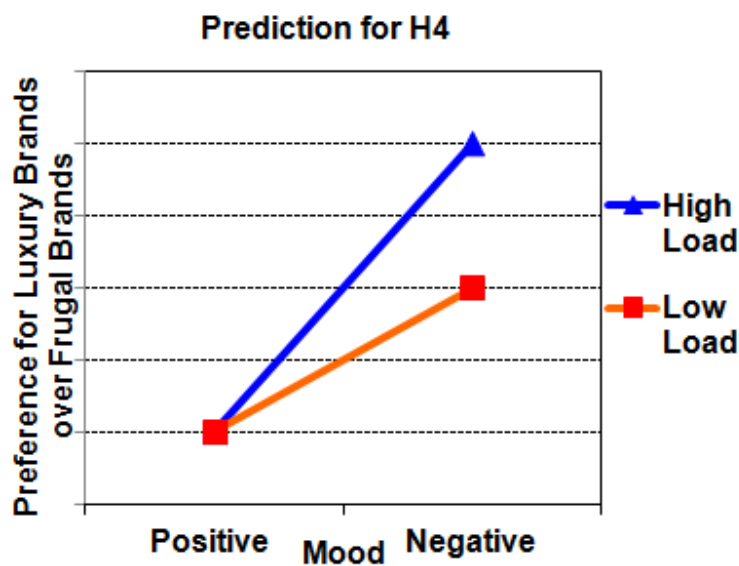


Figure 2.4
PREDICTION FOR H4

Muraven and Baumeister (2000) asserted that self-control consumes personal resources and an individual can control only a limited number of behaviors simultaneously. When a negative mood impairs one's ability to self-control, such resources may be partially used, leaving less available resources for self-control. Since cognitive load may use similar resources, an individual under high cognitive load may have less cognitive resources for self-control, than an

individual under low cognitive load. Thus, the effect of a negative mood on impairment of self-control may be more pronounced for an individual under high cognitive load than for an individual under low cognitive load. Therefore, we have the following predictions;

H4: (a) As mood decreases (more negative), a preference for luxury brands increases; (b) this effect is more pronounced under high cognitive load than under low cognitive load.

2.3.2. Study 2: Effect of Goal on Implicit Attitude

2.3.2.1. Hypotheses 5 & 6 (Cognitive Load and Goal Prime on Implicit Attitude)

The MODE model suggests that under low opportunity (e.g., limited cognitive resources under high cognitive load), an individual's behavior or judgment tends to be automatic (Olson and Fazio, 2009, p. 45). In such cases, an individual's preference should be significantly affected by non-conscious goal primes. Ferguson (2008) suggested that goal activation affects implicit attitude, yet does not affect explicit attitude. Thus, a goal prime should have a significant effect on implicit attitude, rather than an explicit attitude under a high cognitive load.

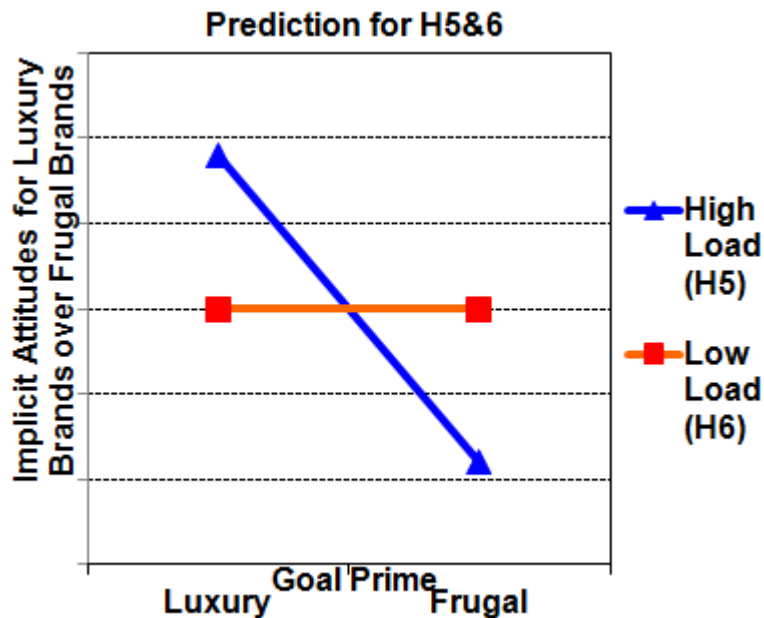


Figure 2.5
PREDICTION FOR H5 & 6

Similar to the effect of a goal prime on preference, an individual should have an implicit attitude consistent with the goal prime. In other words, under a luxury goal, he or she should have a more favorable implicit attitude toward a luxury brand over a frugal brand than under a frugal goal. Since luxury (frugal) brands are a means to achieve a luxury (frugal) goal, an individual with a luxury (frugal) goal should implicitly have more (less) favorable attitudes toward a luxury brand over a frugal brand. However, under low cognitive load, where an individual assumes a more deliberate processing style in his or her behavior, the goal prime should not affect an implicit attitude (Please see Figure 2.5 for prediction). Thus,

H5: Under a high cognitive load, an implicit attitude is consistent with the goal prime.

H6: Under a low cognitive load, an implicit attitude is unaffected by the goal prime.

2.3.2.2. Hypothesis 7 (The Effect of Mood on Implicit Attitude)

Lacking self-control, an individual in a negative mood prioritizes immediate rewards (e.g., buying luxury brands to make himself/herself feel better) rather than long-term benefits (e.g., saving money by buying frugal brands), more so than an individual in a positive mood (Tice, Bratslavsky, and Baumeister, 2001). Thus, an individual in a negative mood may have more favorable implicit attitudes toward luxury brands over frugal brands than an individual in a positive mood.

Once an individual in a negative mood lacks self-control, obtaining immediate rewards (e.g., feeling better by buying luxury brands) may become more important than other long-term goals (e.g., saving money by buying frugal brands). Thus, an individual's implicit attitude toward luxury brands becomes a more efficient means to obtain immediate rewards than frugal brands, and therefore may become a more favorable goal than that toward a frugal brand.

As the MODE model suggests, under a low opportunity condition (e.g., a high cognitive load), an individual's cognition and behavior are guided more by automatic processing,

compared with a high opportunity condition (e.g., a low cognitive load). Compared with deliberative processing, an implicit attitude plays more of a role in guiding an individual's cognition and behavior under automatic processing, than does an explicit attitude. Therefore, the effect of the mood on implicit attitude should be more pronounced under a high cognitive load, than under a low cognitive load (Please see Figure 2.6 for prediction). Thus,

H7: (a) As a mood decreases (becomes more negative), the implicit attitude for luxury brands increases; (b) This effect is less pronounced under a low cognitive load than under a high cognitive load.

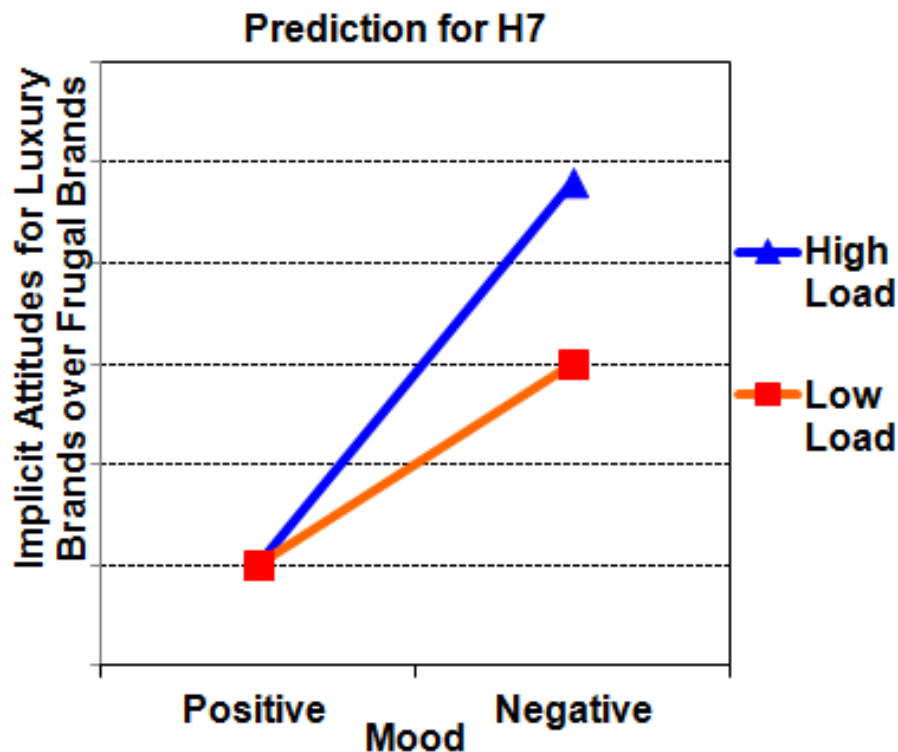


Figure 2.6
PREDICTION FOR H7

2.3.2.3. Hypothesis 8 (Order of the IAT Blocks)

Messner and Vosgerau (2010) studied the effects of order of administering the IAT blocks on the IAT overall results. In the IAT, two categories (e.g., luxury and frugal) are paired

with either positive or negative words. For instance, Blocks 3 & 4 have frugal and positive on the left, and luxury and negative are on the right. Then these pairs are switched in Blocks 6 & 7: luxury and positive are on the left, and frugal and negative are on the right. Messner and Vosgerau (2010) argued that the order of this combination affects the response time of this categorization task. In other words, one can combine luxury and positive (on the left) and frugal and negative (on the right) in Blocks 3 & 4, and then frugal and positive (on the left) and luxury and negative (on the right) in Blocks 6 & 7 (i.e., we call this combination 1).

Another alternative is to combine frugal and positive (on the left) and luxury and negative (on the right) in Blocks 3 & 4, and then luxury and positive (on the left) and frugal and negative (on the right) in Blocks 6 & 7 (i.e., we call this combination 2). In Blocks 6 & 7, a participant learns a new category combination that is inconsistent with that in Blocks 3 & 4 which, Messner and Vosgerau (2010) argued, results in a slower response time in Blocks 6 & 7 than in Blocks 3 & 4, due to cognitive inertia. The study found that due to cognitive inertia, whenever an individual learns a new rule completely different from an earlier learned rule, it takes more time to learn and follow the new rule. Therefore, regardless of the compatibility of word pairs (either of combination 1 or of combination 2), the categorization task in Blocks 6 and 7 will take more time.

For combination 1, the tendency for a longer response time for Blocks 6 & 7 than for Blocks 3 & 4 results in stronger associations between luxury and positive, and between frugal and negative, resulting in an interpretation of a stronger preference for luxury brands over frugal brands than *true* preference. For combination 2, a tendency for a longer response time for Blocks 6 & 7 than for Blocks 3 & 4 results in stronger associations between frugal and positive, and between luxury and negative, resulting in interpretation of a weaker preference for luxury brands than over frugal brands than *true* preference.

H8: Compared to IAT combination two, IAT combination one results in a more favorable implicit attitude toward luxury brands than toward frugal brands.

2.3.3. Study 3: Effect of Goal on Explicit Attitude

2.3.3.1. Hypothesis 9 (The Goal Prime on Explicit Attitude)

The effect of goal activation on explicit attitude is limited (Ferguson and Bargh, 2004). This is because explicit attitude is not as functional as implicit attitude in judging quickly the desirability and undesirability of objects, preparing for goal-consistent behavior and achieving goals (Ferguson and Bargh, 2004). Also, under low cognitive load (i.e., high opportunity), where deliberate processing more likely takes place, we expect no effect of goal prime on either explicit or implicit attitudes. Thus, under low cognitive load, we expect no effect of goal prime on explicit attitudes. Please see Figure 2.7 for prediction. Thus,

H9: Explicit attitude is unaffected by goal prime, regardless of cognitive load.

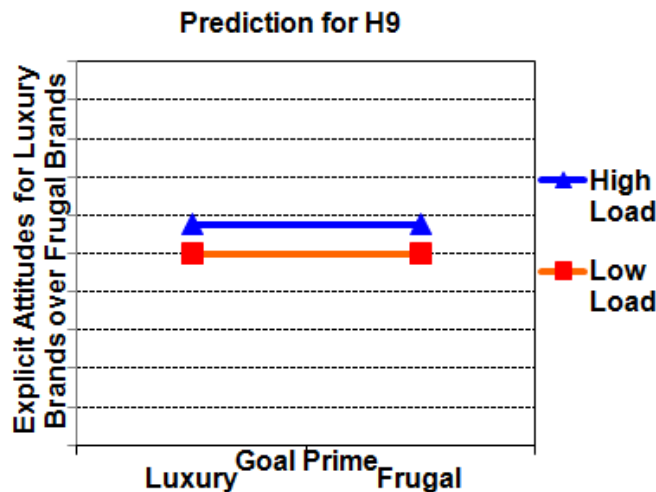


Figure 2.7
PREDICTION FOR H9

2.3.3.2. Hypothesis 10 (Effect of Mood on Explicit Attitude)

We have discussed that lacking self-control, an individual in a negative mood prioritizes immediate rewards (e.g., buying luxury brands) rather than long-term benefits (e.g., saving

money by buying frugal brands), more so than an individual in a positive mood (Tice, Bratslavsky, and Baumeister, 2001). Thus, an individual in a negative mood may have a more favorable attitude, not only in implicit attitudes, but also in explicit attitudes toward luxury brands over frugal brands, than an individual in a positive mood.

Once an individual in a negative mood lacks self-control, obtaining immediate rewards (e.g., feeling better by buying luxury brands) may become more important than long-term goals (e.g., saving money by buying frugal brands). Thus, his or her attitude towards luxury brands, as a more efficient means to obtain immediate rewards, may show more favorable implicit attitudes and explicit attitudes, than toward frugal brands (Please see Figure 2.8 for prediction).

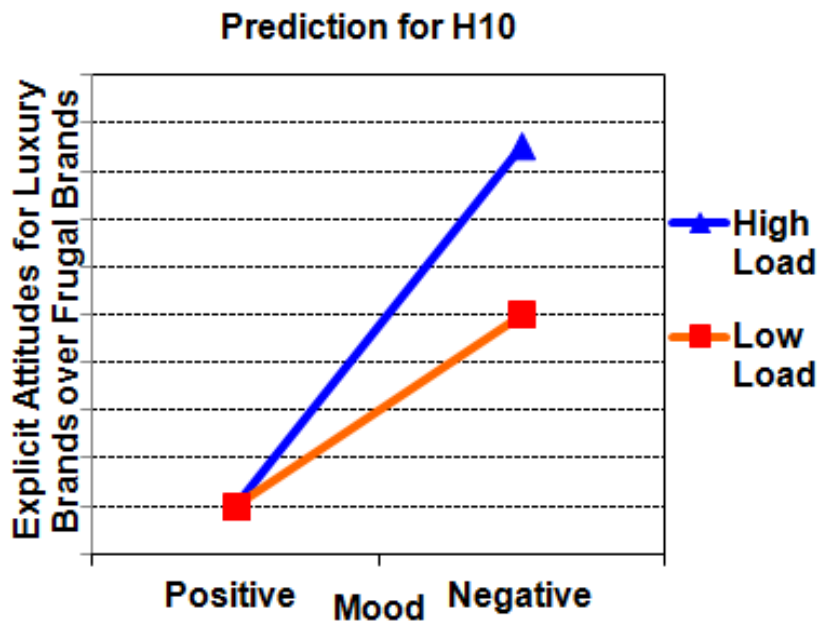


Figure 2.8
PREDICTION FOR H10

As the MODE model suggests, under a high opportunity condition (e.g., a low cognitive load), an individual's cognition and behavior are guided more by deliberative processing, when compared with a low opportunity condition (e.g., high cognitive load). Compared with automatic

processing, an explicit attitude plays a larger role in guiding an individual's cognition and behavior under deliberative processing, than does an implicit attitude. Therefore, the effect of mood on an explicit attitude should be more pronounced under a low cognitive load than under a high cognitive load. Thus,

H10: (a) As mood decreases (more negative), explicit attitude for luxury brands increases; and (b) this effect is more pronounced under a low cognitive load.

2.4. METHODS

2.4.1. Design

Subjects are engaged in multiple tasks on a computer to collect response latencies. A 2 (mood: positive, negative) by 2 (cognitive load: high, low) by 2 (goal prime: frugal, luxury) between-subjects design was employed in all three studies. The only difference between the studies was the dependent variable. In Study 1, the dependent variable was preference. In Study 2, the dependent variable was implicit attitude. In Study 3, the dependent variable was explicit attitude.

2.4.2. Manipulations

2.4.2.1. Mood

Subjects were asked to recall the happiest or unhappiest event in their lives, using an open-ended question. Subjects were also asked to describe the event as vividly as possible, including what exactly happened on that day, and how the event made them feel. This mood manipulation was successfully used in previous studies (Schwarz and Clore, 1983; Fishbach and Labroo, 2007; Labroo and Patrick, 2009).

2.4.2.2. Goal

A supraliminal priming method was employed (Chartrand and Bargh, 1996), where subjects were given work on a scrambled sentence completion task. In other words, subjects

constructed a grammatically correct four-word sentence from a five-word jumble. Among the twelve jumbles in total, ten jumbles contained a prime word associated with either a decadent goal or a wholesome goal. Prime words for the frugal goal include saving, bargain, and economical. Those for the luxury goal include rich, diamond, and lavish (Please see Table 2.1 for the full list of prime words and scrambled sentences).

Table 2.1
SCRAMBLED SENTENCES FOR GOAL MANIPULATION

	<i>Luxury</i>	<i>Frugal</i>	<i>Prime Words?</i>
1	ball the throw toss silently	ball the throw toss silently	No
2	be will swear <i>rich</i> they	be will swear <i>saving</i> they	Yes
3	ate she it <i>diamond</i> all	ate she it <i>bargain</i> all	Yes
4	he <i>lavish</i> drops only seems	he <i>frugal</i> drops only seems	Yes
5	somewhat <i>yacht</i> I am retired	somewhat <i>coupon</i> I am retired	Yes
6	should now be <i>wealthy</i> they	should now be <i>economical</i> they	Yes
7	they obedient him often meet	they obedient him often meet	No
8	<i>millionaire</i> he hides there over	<i>discount</i> he hides there over	Yes
9	is it <i>upscale</i> plant very	is it <i>cost-effective</i> plant very	Yes
10	send I mail it will	send I mail it over	No
11	<i>high-class</i> alone very are they	<i>cost-conscious</i> alone very are they	Yes
12	sky the <i>elegance</i> blue is	sky the <i>sale</i> blue is	Yes

Note: Prime words are italicized only for illustration purposes in the table

For instance, from the five-word jumble, “be will swear *saving* they,” subjects are expected to construct the grammatically correct sentence “they will be *saving*” (the prime word, *saving*, is italicized for illustration purposes; this was not italicized in the actual experiment). In supraliminal priming, an individual is aware of the stimulus itself (scrambled sentences, or prime words), but they are not aware that the priming is affecting their cognitive processes or their behavior.

2.4.2.3. Cognitive Load

Subjects in the low load condition are asked to memorize a 2 digit number, while subjects in the high load condition are asked to memorize an 8 digit number. Subjects are asked to keep

the number in mind throughout the experiment. At the end of the study, they are asked to recall the number.

2.4.3. Measures

2.4.3.1. Implicit Attitude

The implicit association test (IAT) is employed as an implicit attitude measure. In the IAT, subjects engage in two categorization tasks. We follow the same procedure employed in the research of Greenwald, McGhee, and Schwartz (1998). Subjects are shown frugal and luxury brand names, as well as positive and negative words. First, they are asked to categorize the word either as luxury or positive (located on left label) or as frugal or negative (located on right label), (i.e., Task 1). When a brand name or a word is supposed to be categorized as labels on the left (i.e., luxury and positive), subjects are expected to push “E” on the key board. When a brand name or a word is supposed to be categorized as labels on the right (i.e., frugal and negative), subjects are expected to push “I” on the key board. Next, they are asked to categorize the word either as frugal or positive (located on left label) or as luxury or negative (located on right label) (i.e., task two). The response times for these categorization tasks are measured to compute the average response times for these two tasks.

When an individual’s association between luxury (frugal) brands and positive (negative) words is stronger than that between luxury (frugal) brands and negative (positive) words, we assume that the average response time for Task 1 is shorter than that for Task 2. Thus, when the average response time for Task 2 minus the average response time for Task 1 is positive, we can assume that this individual has a preference for luxury brands over frugal brands.

Implicit attitude will be computed following the algorithm developed by Greenwald, Nosek, and Banaji (2003). Among the data from seven blocks (see Table 2.2 for the detail of each block), the analysis will utilize data only from Blocks 3, 4, 6, and 7. First, data considered

as outliers will be eliminated, including trials where the response latency is beyond 10,000 ms or trials where the responses are less than 300ms, accounting for more than 10% of the trials. The former will be eliminated because one single trial is unlikely to take more than 10,000 ms if a subject is paying full attention to the task. Thus, it is possible that a subject is engaged in other unrelated task (e.g., thinking about something else). The latter is eliminated because the trials with less than 300ms latencies are more likely to be considered as random responses (i.e., not following the instructions).

After this treatment for outliers, the mean for correct response latencies for each block will be calculated. One standard deviation for all trials of Blocks 3 and 6, and another standard deviation for all trials of Blocks 4 and 7 will be computed. Response latencies for incorrect answers will be replaced with the block mean (previously computed), plus 600ms. Then, for each block (i.e., Blocks 3, 4, 6, and 7), we average the response latencies that include the original latency for correct responses, as well as the replaced latency for incorrect responses, resulting in M_{b3} M_{b4} M_{b6} and M_{b7} . Then we compute the differences between M_{b6} and M_{b3} ($M_{b6} - M_{b3}$) and between M_{b7} and M_{b4} ($M_{b7} - M_{b4}$). Also, we divide each value by its associated standard deviation, resulting in $(M_{b6} - M_{b3}) / (SD_{b6\&b3})$ and $(M_{b7} - M_{b4}) / (SD_{b7\&b4})$. Finally, we average the two values (Please see Table 2.2.).

2.4.3.2. Explicit Attitude

For explicit attitude measures, 9-point scales (good vs. bad, like vs. dislike, and favorable vs. unfavorable) were used to measure explicit attitude for each brand (frugal or luxury). Subjects evaluated five frugal brands and five luxury brands, one at a time. Subjects chose 1 to indicate an unfavorable attitude (i.e., bad, dislike, unfavorable) and chose 9 to indicate a favorable attitude (i.e., good, like, and favorable). Summated scales for three items were

computed, both for frugal and luxury brands. Then, in the analysis, summated scales for frugal brands were subtracted from those for luxury brands.

Table 2.2
SEQUENCE OF TRIAL BLOCKS IN THE IAT

<i>Block</i>	<i>Number of Trials</i>	<i>Functions</i>	<i>Items assigned to left-key response</i>	<i>Items assigned to right-key response</i>
1	10	Practice	Luxury brand names	Frugal brand names
2	10	Practice	Positive words	Negative words
3	20	Test	Positive words + Luxury brand names	Negative words + Frugal brand names
4	20	Test	Positive words + Luxury brand names	Negative words + Frugal brand names
5	10	Practice	Frugal brand names	Luxury brand names
6	20	Test	Positive words + Frugal brand names	Negative words + Luxury brand names
7	20	Test	Positive words + Frugal brand names	Negative words + Luxury brand names

2.4.3.3. Preference

Subjects were asked to indicate preference between two brands (one frugal and another luxury) in several product categories for ten pairs of brands. For instance, subjects were asked, “If you were to purchase a hotel service, which brand do you prefer?” Then, they are given two choices: Best Western as a frugal choice or Ritz-Carlton as a luxury choice. For five pairs of brands, subjects chose “1” when they preferred the frugal brand, “5” when preference for two brands was indifferent, or “9” when they preferred the luxury brand. For another five pairs of brands, subjects chose “1” when they preferred the luxury brand, “5” when preference for two brands was indifferent, or “9” when they preferred the frugal brand. In repeated measures ANOVA, preference scores for the latter five pairs of brands were reversed. That is, in the

analysis, “1” indicates a preference for frugal brands and “9” indicates a preference for luxury brands.

2.4.3.4. Mood

Four items with a 9-point scale (irritable vs. pleased, sad vs. happy, depressed vs. cheerful, and bad mood vs. good mood) are used to measure mood.

2.4.3.5. Trait-Materialism

We measured an individual’s materialism which is associated with consumer lifestyle, where owning material goods was considered to be a crucial life objective. The materialism scale was adopted from Richins and Dawson (1992). See Appendix III for the list of items.

2.4.3.6. Cognitive Load

At the end of each study, participants were asked to recall the number shown in the beginning of the study, i.e., subjects typed a two or an eight digit number.

2.4.4. Material Pretests

2.4.4.1. Pretest 1: Brand Selection

Pretest 1 was conducted to determine brands that are considered either luxury or frugal. Participants were asked to evaluate the strength of brand association with frugal or luxury. A 9-point scale was used to denote “1” (luxury) and “9” (frugal). In Pretest 1, 62 undergraduate students evaluated 36 brands (18 potential luxury brands and 18 potential frugal brands). Seven luxury brands had means below the mid-point (the means ranged from 1.27 to 3.69) and seven frugal brands had means above the mid-point (the means ranged from 6.39 to 8.52); these were selected. Please see Tables 2.3 and 2.4 for the detailed results. Repeated measures ANOVA revealed that the seven luxury brand names ($M=2.205$) were rated higher in luxury than the seven frugal brand names ($M=7.528$) ($F_{1,61} = 1601.66, p < .001, \eta^2 = .963$).

At the end of the main study, 203 undergraduate students evaluated six additional brands (three potentially frugal and three potentially luxury brands) for the analysis. The means for three luxury brands were below mid-point (the means ranged from 2.16 to 3.13) and the means for three frugal brands were at least above the mid-point (the means ranged from 5.84 to 6.93). Please see Tables 2.3 and 2.4 for the detailed results. Further analysis revealed that these three luxury brand names ($M=2.708$) were rated higher in luxury than the other three frugal brand names ($M=6.483$) ($F_{1, 202} = 540.390, p < .001, \eta^2 = .728$). Thus, these additional three brands were included in the analysis. Thus, overall, ten luxury brands, including BMW, Ritz-Carlton, and Nordstrom, as well as ten frugal brands, inclusive of Kia, Best Western, and Dollar General, were selected for the analysis.

Table 2.3
BRAND IMAGE RATING (LUXURY BRANDS)

<i>Brand</i>	<i>Luxury or Frugal Rating</i>	<i>Category</i>	<i>N</i>
BMW	1.55	Attitude and Preference	62
Ritz-Carlton	1.27	Attitude and Preference	62
Nordstrom	2.92	Attitude and Preference	62
Four Seasons	2.89	Attitude and Preference	62
Saks Fifth Avenue	1.61	Attitude and Preference	62
Armani	1.50	Only Preference	62
Hyatt	3.69	Only Preference	62
Rolex	2.16	Only Preference	203
Neiman Marcus	2.83	Only Preference	203
Ralph Lauren	3.13	Only Preference	203

*9-point scale (1:Associated with Luxury, 9: Associated with Frugal)
Pretest 1(N=62), Main Study (N=203)

2.4.4.2. Pretest 2: Prime Words Generation

Two additional pretests were conducted to choose prime words for the goal manipulation (frugal vs. luxury). In Pretest 2, 16 undergraduate students completed a free recall task for two given words (i.e., frugal and luxury). They were asked to list a set of five words associated with frugal and another set of five words associated with luxury. We also selected a series of words

from the free association norms database, provided by Nelson, McEvoy, and Schreiber (1998). This database provides results from free words association tests for many words, including luxury, rich, elegant, and others. We also selected some synonyms of wholesome and decadent. Using these three sources, we constructed a list of 25 prime words to associate with luxury goal and 24 words to associate with frugal goal.

Table 2.4
BRAND IMAGE RATING (FRUGAL BRANDS)

<i>Brand</i>	<i>Luxury or Frugal Rating</i>	<i>Category</i>	<i>N</i>
Kia	7.11	Attitude and Preference	62
Best Western	6.98	Attitude and Preference	62
Dollar General	8.52	Attitude and Preference	62
Motel 6	8.50	Attitude and Preference	62
Wal-Mart	7.68	Attitude and Preference	62
Hanes	6.39	Only Preference	62
Days Inn	7.52	Only Preference	62
Timex	5.84	Only Preference	203
Sam's Club	6.93	Only Preference	203
Old Navy	6.68	Only Preference	203

*9-point scale (1:Associated with Luxury, 9: Associated with Frugal)
Pretest 1(N=62), Main Study (N=203)

2.4.4.3. Pretest 3: Prime Words Validation

In Pretest 3, 24 undergraduate students evaluated the 49 (25 luxury and 24 frugal) prime words on both valence and strength of association with “frugal” or “luxury.” Ten primes words, relatively associated with “luxury,” where the means ranged from 2.625 to 1.833 on a 9-point scale (“1,” Strongly associated with "Luxury," to “9,” Not at all associated with "Luxury") were selected for further testing. All ten prime words were rated as positive rather than negative, with the means ranging from 6.04 to 7.75, also on a 9-point scale (“1,” negative to “9,” positive) (Please see Table 2.5). Then, another ten prime words, relatively associated with “frugal,” where the means ranged from 6.04 to 7.67 on a 9-point scale (“1,” Not at all associated with "FRUGAL,” to “9,” Strongly associated with "FRUGAL") were selected for further testing. All

of these ten prime words are rated as relatively positive, the means ranging from 6.08 to 7.29 in a 9-point scale (1: negative, 9: positive) (Please see Table 2.6).

Table 2.5
PRIME WORDS RATING FOR LUXURY (N=24)

<i>Prime Words</i>	<i>Luxury</i>	<i>Valence</i>
Lavish	1.833	6.04
Yacht	1.875	7.63
Millionaire	2.250	7.63
Upscale	2.292	7.25
Diamond	2.292	7.75
Wealthy	2.375	7.75
Rich	2.417	6.92
High-Class	2.417	7.54
Elegance	2.625	7.83

Table 2.6
PRIME WORDS RATING FOR FRUGAL (N=24)

<i>Prime Words</i>	<i>Frugal</i>	<i>Valence</i>
Thrifty	7.67	6.08
Cost-Conscious	7.67	6.25
Economical	7.17	7.08
Saving	6.88	7.29
Cost-Effective	6.58	7.29
Discount	6.54	6.88
Coupon	6.38	5.96
Sale	6.21	7.13
Bargain	6.04	7.00

Repeated measures ANOVA revealed that the ten prime words for luxury were rated higher in luxury ($M=2.264$) than those for frugal ($M=6.685$) ($F_{1, 23} = 171.78, p < .001, \eta^2 = .882$).

The ten prime words for a luxury goal include rich, diamond, lavish, yacht, wealthy, millionaire, upscale, high-class, elegance, and luxury. Then, the prime words for frugal include saving, bargain, frugal, coupon, economical, discount, cost-effective, cost-conscious, sale, and thrifty.

2.4.5. Procedures

2.4.5.1. Study 1

Several days before the experiment, 96 student subjects completed an online study that was intended to measure the traits of frugality and materialism. The subjects then participated in

a study that was administered in a computer lab. The study was administered with E-prime software to measure response latencies. First, subjects completed a mood manipulation task, describing either a happy or unhappy event. After completing the task, as a manipulation check, subjects are asked to indicate how this task made them feel, using a four-item mood scale (irritable vs. pleased, sad vs. happy, depressed vs. cheerful, and bad mood vs. good mood).

Then, cognitive load was manipulated, followed by goal manipulation (i.e., sentence completion task). Next, subjects reported their preferences toward ten brand pairs. Then, subjects were asked to recall the number that they were asked to remember in the beginning of the study. At the end of the study, subjects were asked to guess what had been tested in the study. In this question, subjects were presented with a list of tasks they completed in the study and were asked to guess how each task was related. This task was intended to identify those subjects who successfully guessed the purpose of the priming task (i.e., sentence completion task).

2.4.5.2. Study 2

Forty-eight subjects completed Study 2. The procedure for Study 2 was identical to that for Study 1, except that the subjects completed the IAT, instead of a preference task.

2.4.5.3. Study 3

Fifty subjects completed Study 3. The procedure for Study 3 was identical to that for Study 1, except that the subjects completed explicit attitude measures, rather than a preference task.

2.5 ANALYSIS

2.5.1. Preliminary Checks

2.5.1.1. Reliability

In all three studies, the four-item 9-point scales were used to measure how the description of happy events made respondents feel. Cronbach's Alphas were .958 in Study 1, .950 in Study 2,

and .955 in Study 3. Similarly, a five-item 9-point scale was used to measure materialism. Cronbach's Alphas were .849 in Study 1, .804 in Study 2, and .811 in Study 3. Although the scale originally had six items, one item was deleted to improve the reliability. After the deletion, Cronbach's Alpha improved from .753 to .849 in Study 1, from .735 to .804 in Study 2, and .781 to .811 in Study 3.

2.5.1.2. Manipulation and Confound Check (Study 1)

In Study 1, participants who described a happy event reported that this task made them feel significantly more positive ($M = 6.778$) than those who described an unhappy event ($M = 3.376$) ($F_{1, 91} = 129.986, p < .001, \eta^2 = .588$). Also, the manipulations did not affect the mood measures. The effect of goal prime on the mood measure was not significant ($F_{1, 91} = .943, p = .334, \eta^2 = .010$). Similarly, the effect of cognitive load on the mood measure was not significant ($F_{1, 91} = .089, p = .766, \eta^2 = .001$).

The trait (i.e., materialism) was measured separately a few days before the main study. Therefore, we did not expect the manipulations to affect the trait measures. The analysis revealed that none of the following manipulations had any effect on trait (i.e., materialism): mood ($F_{1, 89} = .099, p = .754, \eta^2 = .001$), cognitive load ($F_{1, 89} = .025, p = .874, \eta^2 = .000$), and goal prime ($F_{1, 89} = .182, p = .671, \eta^2 = .002$).

As expected, participants under low cognitive load recalled the two-digit number (i.e., 78) more accurately than those under high cognitive load recalled the eight-digit number (i.e., 75893167) (chi-square test = 35.536, $p < .001$). Under low-cognitive load, all 51 participants recalled the number correctly, whereas under high-cognitive load, only 23 participants among 48 participants recalled the number correctly. However, as expected, neither the mood manipulation (chi-square test = .975, $p = .323$) nor the goal prime (chi-square = .030, $p = .863$) affected the accuracy of the number recall.

2.5.1.3. Manipulation and Confound Check (Study 2)

In Study 2, participants who described a happy event reported that this task made them feel significantly more positive ($M = 6.809$) than those who described an unhappy event ($M = 3.828$) ($F_{1,40} = 54.356, p < .001, \eta^2 = .576$). The manipulations did not affect the mood measures. The effect of goal prime on the mood measure was not significant ($F_{1,40} = .158, p = .693, \eta^2 = .004$). Similarly, the effect of cognitive load on the mood measure was not significant ($F_{1,40} = .580, p = .451, \eta^2 = .014$). The analysis revealed that none of the following manipulations affected materialism: mood ($F_{1,39} = .895, p = .350, \eta^2 = .022$), cognitive load ($F_{1,39} = .030, p = .863, \eta^2 = .001$), and goal prime ($F_{1,39} = .009, p = .924, \eta^2 = .000$).

As expected, participants under low cognitive load recalled the two-digit number (i.e., 78) more accurately than those under high cognitive load, who recalled the eight-digit number (i.e., 75893167) (chi-square = 12.735, $p < .001$). All 20 participants in the low-cognitive load recalled the number correctly, while only 15 among the 28 participants under the high-cognitive load recalled the number accurately. However, as expected, neither the mood (chi-square = .105, $p = .745$) nor the goal prime (chi-square = .639, $p = .424$) affected the accuracy of the number recall.

2.5.1.4. Manipulation and Confound Check (Study 3)

In Study 3, participants who described a happy event reported that this task made them feel a significantly more positive mood ($M = 6.956$) than those who described an unhappy event ($M = 3.309$) ($F_{1,42} = 82.771, p < .001, \eta^2 = .663$). However, the manipulations did not affect the mood measures. The effect of goal prime on the mood measure was not significant ($F_{1,42} = .913, p = .345, \eta^2 = .021$). Similarly, the effect of cognitive load on mood was not significant ($F_{1,42} = 1.420, p = .240, \eta^2 = .033$). The analysis revealed that none of the following manipulations

affected materialism: mood ($F_{1,42} = 1.080$, $p = .305$, $\eta^2 = .025$), cognitive load ($F_{1,42} = .000$, $p = .994$, $\eta^2 = .000$), and goal prime ($F_{1,42} = .035$, $p = .852$, $\eta^2 = .001$).

As expected, participants under low cognitive load recalled the two-digit number (i.e., 78) more accurately than those under high cognitive load recalled the eight-digit number (i.e., 75893167) (chi-square test = 21.805, $p < .001$). All 29 participants in the low-cognitive load recalled the number accurately, yet only 9 participants among 21 participants in the high-cognitive load recalled the number accurately. However, as expected, neither the mood (chi-square test = .025, $p = .874$) nor the goal prime (chi-square test = .102, $p = .750$) affected the accuracy of the number recall.

2.5.1.5. Outlier Analysis

In Study 1, three subjects reported that they thought there was a connection between the goal manipulation and preference. Although all of these subjects may not have identified the role of the prime words in the goal manipulation task, these three subjects were removed from the analysis to avoid any possibility that the goal was consciously activated. In Study 2, none of the subjects reported a connection between the goal manipulation and the IAT. In Study 3, three subjects reported that they thought there was a connection between the goal manipulation and the explicit attitude task. Finally, to avoid any possibility that the goal was consciously activated, these three subjects were removed from the analysis.

2.5.2. Study 1

2.5.2.1. Hypothesis 1

A repeated measures ANOVA was conducted to assess the effect of mood, cognitive load, goal, and materialism on preference. The dependent variable was brand preference toward luxury brand vs. frugal brand. The within-subject factor consisted of ten different pairs of brands in different product categories. The between-subject factors were mood (positive vs. negative),

cognitive load (high vs. low load), goal prime (luxury vs. frugal), and trait (median split of materialism). Please see Table 2.7 for the results.

Table 2.7
REPEATED MEASURES OF ANOVA RESULTS FOR PREFERENCE

<i>Sources</i>	<i>df</i>	<i>F</i>	<i>p-value</i>	<i>η²</i>
Brand	1	24.529	.000	.232
Brand x Mood	1	2.485	.119	.030
Brand x Goal Prime	1	.893	.347	.011
Brand x Cognitive Load	1	1.377	.244	.017
Brand x Materialism	1	.974	.327	.012
Brand x Mood x Goal Prime	1	1.177	.281	.014
Brand x Mood x Cognitive Load	1	.816	.369	.010
Brand x Mood x Materialism	1	1.380	.244	.017
Brand x Goal Prime x Cognitive Load	1	.460	.500	.006
Brand x Goal Prime x Materialism	1	.589	.445	.007
Brand x Cognitive Load x Materialism	1	1.029	.313	.013
Brand x Mood x Goal Prime x Cognitive Load	1	.978	.326	.012
Brand x Mood x Goal Prime x Materialism	1	1.038	.311	.013
Brand x Mood x Cognitive Load x Materialism	1	.566	.454	.007
Brand x Goal Prime x Cognitive Load x Materialism	1	.939	.335	.011
Brand x Mood x Goal Prime x Cognitive Load x Materialism	1	1.797	.184	.022
Mood	1	3.700	.058	.044
Goal	1	3.008	.087	.036
Cognitive Load	1	5.810	.018	.067
Materialism	1	3.906	.052	.046
Mood x Goal	1	1.313	.255	.016
Mood x Cognitive Load	1	.954	.332	.012
Mood x Materialism	1	6.658	.012	.076
Goal x Cognitive Load	1	.109	.742	.001
Goal x Materialism	1	.470	.495	.006
Cognitive Load x Materialism	1	5.482	.022	.063
Mood x Goal x Cognitive Load	1	5.046	.027	.059
Mood x Goal x Materialism	1	.664	.418	.008
Mood x Cognitive Load x Materialism	1	.130	.719	.002
Goal x Cognitive Load x Materialism	1	.200	.656	.002
Mood x Goal x Cognitive Load x Materialism	1	.661	.419	.008

Note: All tests reported are two-tailed.

The three-way interaction among goal prime, cognitive load, and materialism on preference was not significant ($F_{1,84} = .200, p = .656, \eta^2 = .002$). Although we predicted that under a high cognitive load, consumers prefer brands consistent with the goal prime, the main

effect of goal prime on preference was not significant ($F_{1, 39} = 1.088, p = .303, \eta^2 = .027$).

Please see Figure 2.9 for the result.

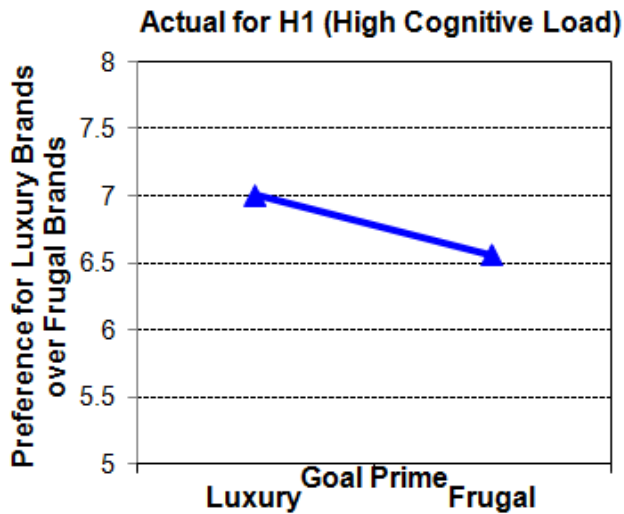


Figure 2.9
ACTUAL FOR H1

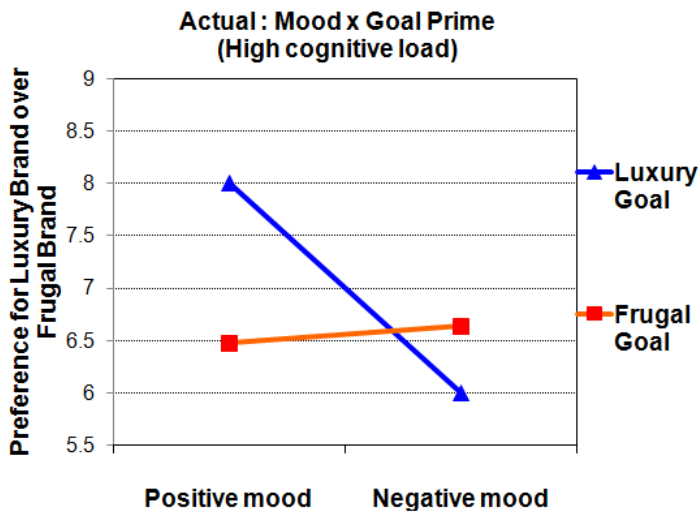


Figure 2.10
GOAL AND MOOD ON PREFERENCE

However, the three-way interaction among cognitive load, mood, and goal prime on preference was significant ($F_{1, 84} = 4.512, p = .037, \eta^2 = .051$). Under a high cognitive load, the two-way interaction between mood and goal prime on preference was significant ($F_{1, 39} = 6.345, p = .016, \eta^2 = .140$). Under a high cognitive load and in the positive mood condition, individuals

with the luxury goal prime had a higher preference for the luxury brands than did those with the frugal goal prime ($M_{LUX}=8.009$, $M_{FRUGAL}=6.476$) ($F_{1,20} = 6.804$, $p = .017$, $\eta^2 = .254$). Under a high cognitive load and in the negative mood condition, brand preferences were not affected by the goal prime ($F_{1,19} = 1.016$, $p = .326$, $\eta^2 = .051$). Thus, H1 was supported in a positive mood, but not in a negative mood condition. Please see Figure 2.10 for the two-way interaction of mood and goal prime on preference under high cognitive load.

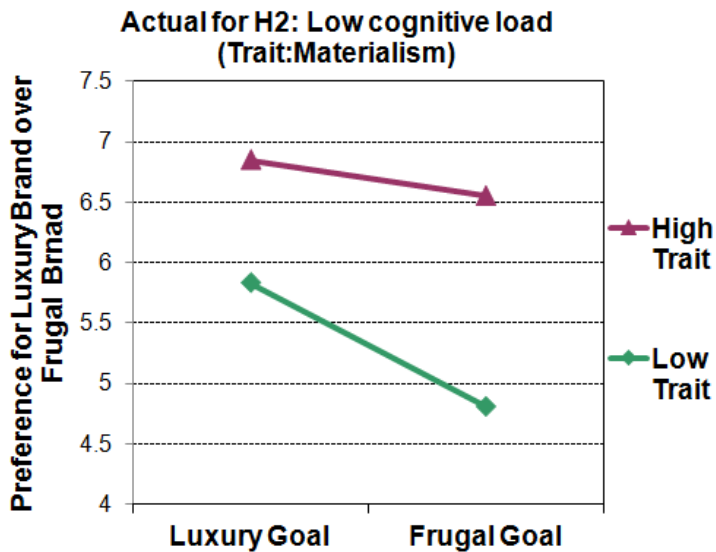


Figure 2.11
ACTUAL FOR H2

2.5.2.2. Hypothesis 2

Under a low cognitive load, the interaction between materialism and goal prime on preference was not significant ($F_{1,42} = .590$, $p = .447$, $\eta^2 = .014$). Under a low cognitive load, only the main effect of materialism was significant ($F_{1,42} = 8.563$, $p = .006$, $\eta^2 = .169$), where preference was higher for luxury brands for consumers with high materialism ($M=6.699$) than for consumers with low materialism ($M=5.319$). The goal prime did not affect preference for individuals with either high materialism ($F_{1,25} = .307$, $p = .584$, $\eta^2 = .012$), supporting H2b, or

low materialism ($F_{1,17} = 1.550$, $p = .230$, $\eta^2 = .084$), rejecting H2a. Please see Figure 2.11 for the result.

2.5.2.3. Hypothesis 3

H3 was meant to test whether the effect of goal prime on preference is maintained over time. As was tested for H1, consumers under a high cognitive load preferred brands consistent with the goal prime in a positive mood, but not in a negative mood. As it was meaningless to test this prediction in a condition where no main effect of goal prime on preference existed, H3 was tested under a high cognitive load and in a positive mood.

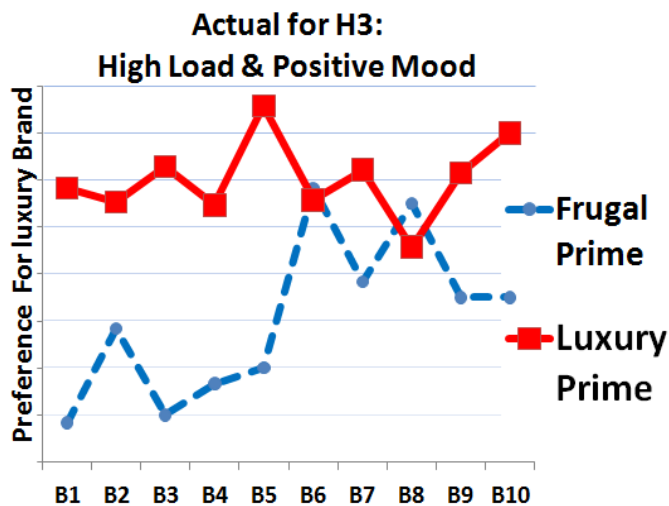


Figure 2.12
ACTUAL FOR H3

Under a high cognitive load and a positive mood, the effect of goal prime on preference was significant ($F_{1,19} = 5.92$, $p = .025$, $\eta^2 = .238$). Yet the two-way interaction between preference order and goal prime was not significant ($F_{1,19} = 1.396$, $p = .252$, $\eta^2 = .068$), supporting H3a and rejecting H3b. This is an indication that the prime words are activating a goal, rather than merely activating prime-related associative cues. Please see Figure 2.12 for the result.

2.5.2.4. Hypothesis 4

Both the main effect of mood on preference ($F_{1,81} = 3.7, p = .058, \eta^2 = .044$) and the two-way interaction between mood and cognitive load on preference ($F_{1,81} = .954, p = .332, \eta^2 = .012$) were not significant, rejecting both H4a and H4b. Please see figure 2.13 for the result. Further analysis revealed that under a positive mood, individuals under a high cognitive load preferred luxury brands to frugal brands, more than those under a low cognitive load ($F_{1,81} = 6.21, p = .015, \eta^2 = .071$).

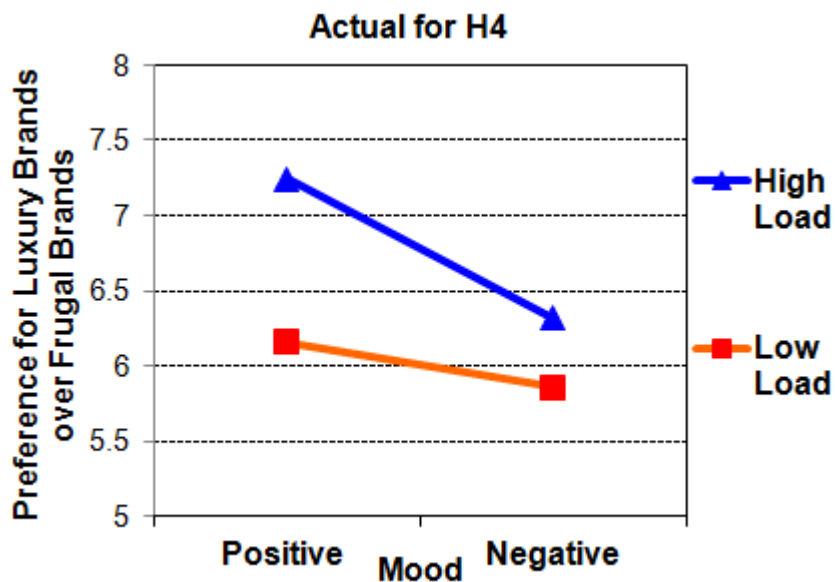


Figure 2.13
ACTUAL FOR H4

Also, under a high cognitive load, individuals in a positive mood preferred luxury brands to frugal brands, more than those in a negative mood ($F_{1,81} = 4.244, p = .043, \eta^2 = .050$). However, since the three-way interaction of mood, cognitive load, and goal prime was significant ($F_{1,81} = 5.046, p = .027, \eta^2 = .059$), the two-way interaction of mood and cognitive load on preference should be analyzed in relation with the goal prime. Please see 2.6.10 for

further discussion on the three way interaction of mood, cognitive load, and goal prime on preference.

2.5.3. Study 2

2.5.3.1. Hypotheses 5 & 6

An analysis of variance was conducted to assess the effect of mood, cognitive load, goal, materialism, and category combination on implicit attitude. The dependent variable was implicit attitude toward luxury brands over frugal brands. The between-subject factors were mood (positive vs. negative), cognitive load (high vs. low load), goal prime (luxury vs. frugal), and trait (median split of materialism). Materialism had no meaningful effect on implicit attitude. Thus, we dropped this variable from the analysis. Please see Table 2.8 for the ANOVA results.

Table 2.8
ANOVA RESULTS FOR IMPLICIT ATTITUDE

<i>Sources</i>	<i>df</i>	<i>F</i>	<i>p-value</i>	<i>η²</i>
Mood	1	.186	.669	.006
Goal	1	.546	.465	.017
Cognitive Load	1	.874	.357	.027
Category Combination	1	17.107	.000	.348
Mood x Goal	1	.119	.732	.004
Mood x Cognitive Load	1	1.830	.186	.054
Mood x Category Combination	1	.471	.498	.014
Goal x Cognitive Load	1	.816	.373	.025
Goal x Category Combination	1	.107	.746	.003
Cognitive Load x Category Combination	1	.048	.828	.001
Mood x Goal x Cognitive Load	1	4.223	.048	.117
Mood x Goal x Category Combination	1	.002	.963	.000
Mood x Cognitive Load x Category Combination	1	1.423	.242	.043
Goal x Cognitive Load x Category Combination	1	.167	.685	.005
Mood x Goal x Cognitive Load x Category Combination	1	.112	.740	.003

Note: All tests reported are two-tailed.

The main effect of goal prime on implicit attitude was not significant ($F_{1, 32} = .546$, $p = .465$, $\eta^2 = .017$). Similarly, the two-way interaction between goal prime and cognitive load on

implicit attitude was not significant ($F_{1,32} = .546, p = .465, \eta^2 = .017$). Thus, the main effect of goal prime on implicit attitude was not significant regardless of cognitive load, rejecting H5, and supporting H6. However, the three-way interaction among mood, goal prime, and cognitive load on implicit attitude was significant ($F_{1,32} = 4.223, p = .048, \eta^2 = .117$). Please see the next section (Hypothesis 7) for the analysis of this three way-interaction. Please see Figure 2.14 for the result.

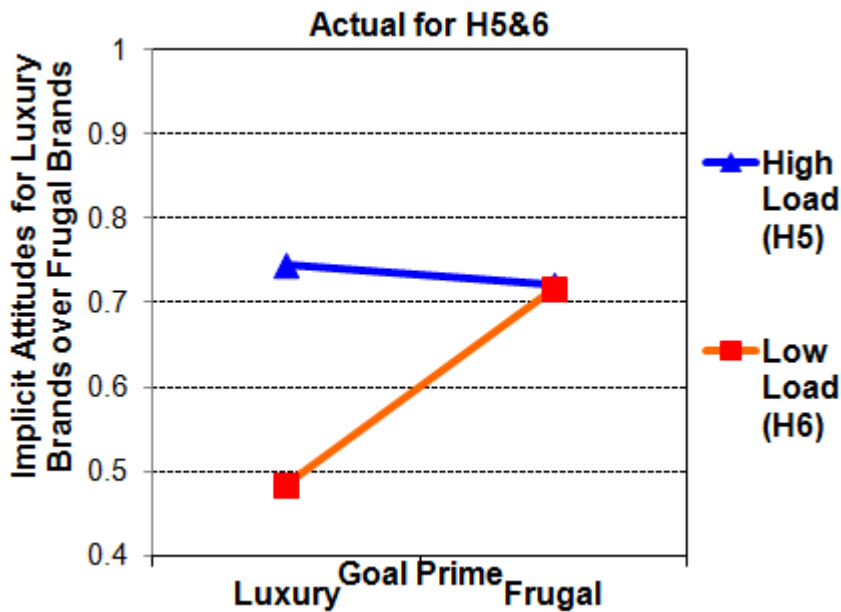


Figure 2.14
ACTUAL FOR H5 & H6

2.5.3.2. Hypothesis 7

The main effect of mood on implicit attitude was not significant ($F_{1,32} = .186, p = .669, \eta^2 = .006$). The interaction between mood and cognitive load on implicit attitude was not significant as well ($F_{1,32} = 1.830, p = .186, \eta^2 = .054$). Thus, both H7a and H7b were rejected. Please see Figure 2.15 for the result. Pairwise comparisons also revealed that none of the conditions were significantly different ($p\text{-values} > .05$). For instance, in the negative mood condition, implicit attitudes for individuals under high cognitive load and low cognitive load

were not significantly different ($F_{1,32} = 2.650, p = .113, \eta^2 = .076$). Also, under a high cognitive load, implicit attitudes for individuals in positive mood and those in negative mood were not significantly different ($F_{1,32} = 1.825, p = .186, \eta^2 = .054$).

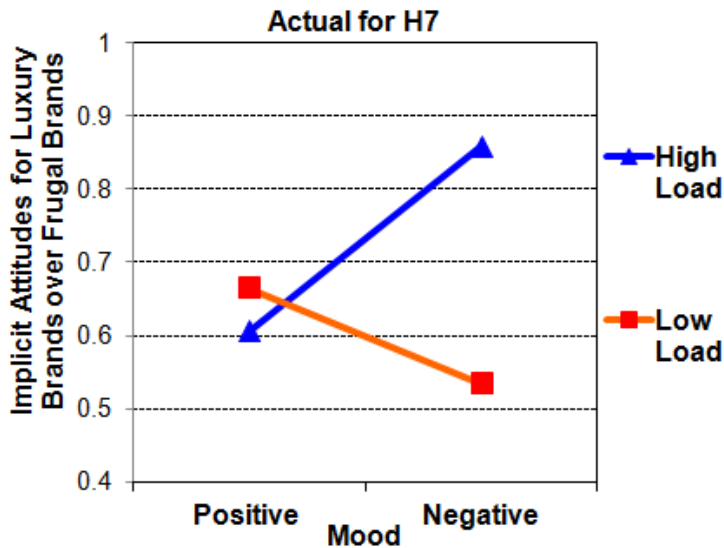


Figure 2.15
ACTUAL FOR H7

However, the three-way interaction of mood, goal prime, and cognitive load on implicit attitude was significant ($F_{1,32} = 4.223, p = .048, \eta^2 = .117$). Further analysis revealed that the two way-interaction of mood and goal on implicit attitude under a high cognitive load was not significant ($F_{1,20} = 3.042, p = .097, \eta^2 = .132$). Under a low cognitive load, the main effect of goal prime ($F_{1,12} = 1.395, p = .260, \eta^2 = .104$) on the implicit attitude was not significant. Under low cognitive load, the main effect of mood ($F_{1,12} = .440, p = .520, \eta^2 = .035$) on implicit attitude was not significant. Similarly, under low cognitive load, the interaction of mood, and goal prime on implicit attitude was not significant ($F_{1,12} = 1.513, p = .242, \eta^2 = .112$).

Further analysis revealed that under a high cognitive load and the luxury goal prime, individuals in a negative mood had a more favorable implicit attitude toward the luxury brand than those in a positive mood ($F_{1,32} = 4.199, p = .049, \eta^2 = .116$). Another analysis revealed

that under a negative mood and the luxury goal prime, individuals under a high cognitive load had a more favorable implicit attitude toward the luxury brand than those under the low cognitive load ($F_{1,32} = 5.626, p = .024, \eta^2 = .150$).

2.5.3.3. Hypothesis 8

The main effect of category combination on implicit attitude was significant ($F_{1,91} = 17.107, p < .001, \eta^2 = .348$) such that the implicit attitude for the luxury brand was higher in combination one ($M = .959$) than in combination two ($M = .373$), supporting H8. However, the two-way interactions between category combination and goal ($F_{1,91} = .107, p = .746, \eta^2 = .003$), category combination and mood ($F_{1,91} = .471, p = .498, \eta^2 = .014$), and category combination and cognitive load ($F_{1,91} = .048, p = .828, \eta^2 = .001$) were not significant. Thus, H8 holds, regardless of goal prime, mood, or cognitive load.

2.5.4. Study 3

2.5.4.1. Hypothesis 9

An ANOVA was conducted to assess the effect of mood, cognitive load, goal, and materialism on explicit attitude. The dependent variable was explicit attitude toward luxury brands over frugal brands. The between-subject factors were mood (positive vs. negative), cognitive load (high vs. low load), goal prime (luxury vs. frugal), and trait (median split of materialism). Please see Table 2.9 for the ANOVA results.

As expected, the main effect of goal on explicit attitude was not significant ($F_{1,34} = 1.047, p = .313, \eta^2 = .030$), supporting H9. Also, there were no significant interactions on explicit attitude between goal prime and mood ($F_{1,34} = .278, p = .602, \eta^2 = .008$) and between goal prime and cognitive load ($F_{1,34} = .957, p = .335, \eta^2 = .027$). Thus, the main effect of goal prime on explicit attitude was not significant regardless of mood or cognitive load. For instance, under a low cognitive load, the main effect of goal prime on explicit attitude was not significant

(M = 3.108 for luxury goal and M = 2.238 for frugal goal) ($F_{1,21} = 1.927$, $p = .180$, $\eta^2 = .084$).

Please see Figure 2.16 for the result.

Table 2.9
REPEATED MEASURES OF ANOVA RESULTS FOR EXPLICIT ATTITUDE

<i>Sources</i>	<i>df</i>	<i>F</i>	<i>p-value</i>	<i>η²</i>
Mood	1	2.771	.105	.075
Goal	1	1.047	.313	.030
Cognitive Load	1	.107	.746	.003
Materialism	1	1.758	.194	.049
Mood x Goal	1	.278	.602	.008
Mood x Cognitive Load	1	.170	.683	.005
Mood x Materialism	1	3.801	.059	.101
Goal x Cognitive Load	1	.957	.335	.027
Goal x Materialism	1	.117	.735	.003
Cognitive Load x Materialism	1	.088	.768	.003
Mood x Goal x Cognitive Load	1	.265	.610	.008
Mood x Goal x Materialism	1	.002	.965	.000
Mood x Cognitive Load x Materialism	1	.289	.595	.008
Goal x Cognitive Load x Materialism	1	1.420	.242	.040
Mood x Goal x Cognitive Load x Materialism	1	.037	.849	.001

Note: All tests reported are two-tailed.

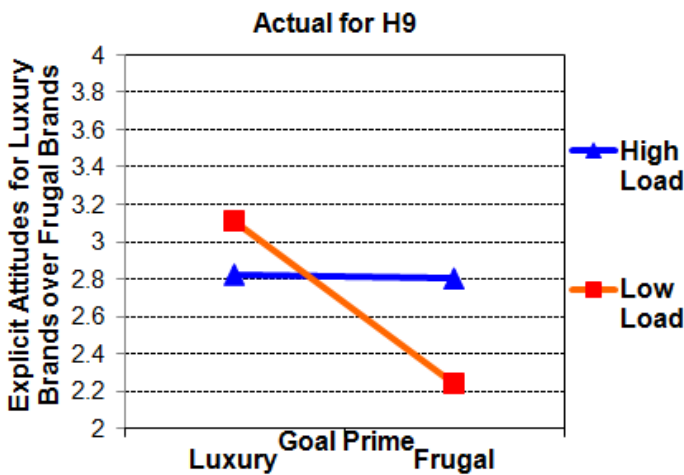


Figure 2.16
ACTUAL FOR H9

2.5.4.2. Hypothesis 10

Although as expected, an individual in a negative mood (M = 3.106) had a more favorable explicit attitude for luxury brands than an individual in a positive mood (M = 2.383),

this main effect of mood on explicit attitude was not statistically significant ($F_{1,34} = 2.771$, $p = .105$, $\eta^2 = .075$). Pairwise comparisons also revealed that none of the conditions were significantly different (p -values $>.05$). For instance, under a high cognitive load, explicit attitudes for individuals in a positive mood and those in a negative mood were not significantly different ($F_{1,34} = 2.132$, $p = .153$, $\eta^2 = .059$). Please see Figure 2.17.

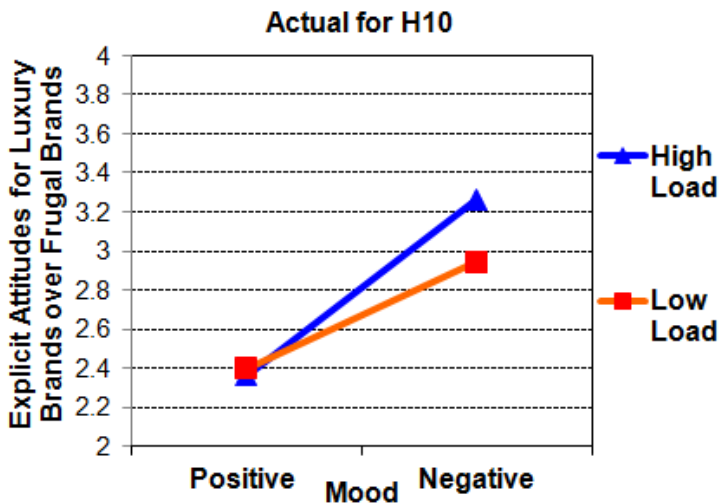


Figure 2.17
ACTUAL FOR H10

The interaction of mood and materialism was marginally significant ($F_{1,34} = 3.801$, $p = .059$, $\eta^2 = .101$). However, further analysis revealed that individuals with low consumer materialism had more favorable explicit attitudes for luxury brands in a negative mood ($M=3.242$) than in a positive mood ($M=1.671$) ($F_{1,14} = 7.388$, $p = .017$, $\eta^2 = .345$). Among individuals with high consumer materialism, explicit attitudes were not affected by mood ($F_{1,20} = .042$, $p = .839$, $\eta^2 = .002$). Please see Figure 2.18 for the result. Thus, H10a was supported only for individuals with low materialism, but not for individuals with high materialism. The interaction of mood and cognitive load on explicit attitude was not significant ($F_{1,34} = .170$, $p = .683$, $\eta^2 = .005$). Similarly, the three-way interaction of mood, materialism, and cognitive load

on explicit attitude was not significant ($F_{1, 34} = .289, p = .595, \eta^2 = .008$). Thus, H10b was rejected.

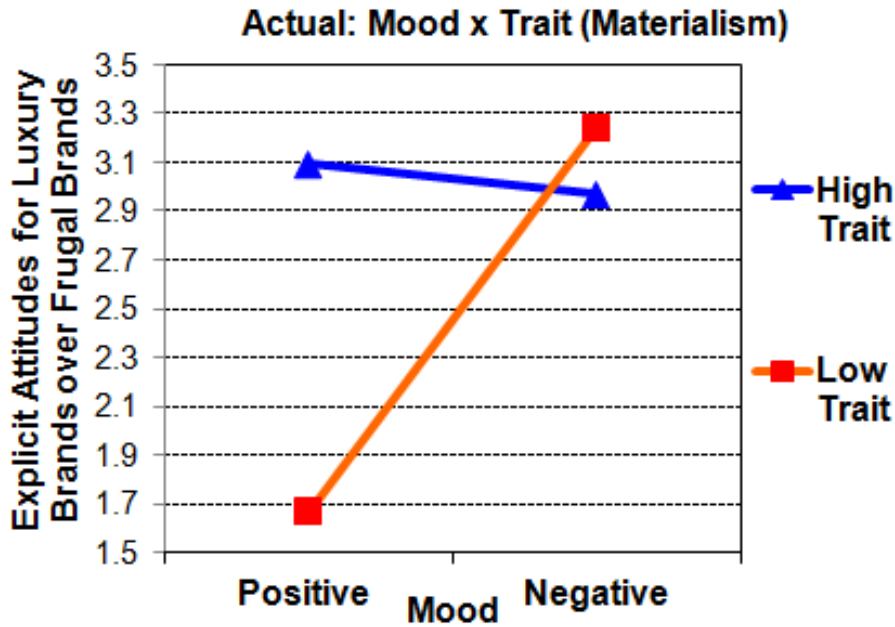


Figure 2.18
MOOD X TRAIT ON EXPLICIT ATTITUDE

2.6 Discussion

2.6.1. Hypothesis 1

Although we have predicted that an individual prefers brands consistent with the goal prime regardless of consumer materialism, this prediction was supported only in a positive mood, but not in a negative mood. Whereas an individual in a positive mood preferred brands consistent with the goal prime, the study found that in a negative mood, brand preference was not affected by the goal prime. Thus, the effect of the goal prime on preference was moderated by mood.

Consistent with the mood-as-information approach, Fishbach and Labroo (2007) suggested an individual in a positive mood tends to approach the goal while an individual in a negative mood tends to avoid the goal. Thus, under a high cognitive load, where opportunity is low, an individual in a positive mood may approach the goal, with a result of goal-consistent

behavior. Under a high cognitive load, an individual in a negative mood may avoid the goal prime, with a result of goal-inconsistent behavior.

2.6.2. Hypothesis 2

We have predicted that under a low cognitive load (i.e., high opportunity) and high motivation (i.e., high materialism), preference would not be guided by automatic processes, and be less affected by a non-conscious goal prime. However, under a low cognitive load and low motivation (i.e., low materialism), preference would be guided by relatively automatic processes and be more affected by a non-conscious goal prime. The results show that under low-cognitive load, the two-way interaction between materialism and goal on preference was not significant. The goal prime did not affect preference, regardless of the degree of materialism. However, the main effect of materialism on preference was significant under low cognitive load. Thus, the results seem to indicate that under a low cognitive load (i.e., high opportunity), an individual's preference is guided mainly by his or her trait (e.g., materialism) rather than by a non-conscious goal prime.

2.6.3. Hypothesis 3

Under a high cognitive load and a positive mood, subjects preferred brands consistent with the goal prime. If the goal prime is activating only semantic cues, the effect of goal prime on preference should diminish over time. Alternatively, if the goal prime is activating a goal, the effect of goal prime on preference should not diminish over time.

In the study, subjects completed ten preference tasks that included one luxury brand and one frugal brand. If the goal prime merely activated semantic cues, its effect would diminish, due to decay in memory. In contrast, the goal prime might activate a goal. In such cases, its effect would not diminish, unless an individual achieved the goal. This is because the preference task is hypothetical and therefore not a real choice task, the individual should not have a satiation effect.

Since the two-way interaction between brand order and goal prime was not significant, the effect of the goal prime on preference was consistent over time. This indicates that the goal prime activates a goal rather than a semantic cue, thereby supporting H3a and rejecting H3b.

2.6.4. Hypothesis 4

Although the study predicted that compared to those in a positive mood, individuals in a negative mood tend to lack self-control favoring immediate rewards over long-term rewards, thus preferring luxury brands to frugal brands. Also, since a cognitive load may impair self-control, we predicted that the effect of mood on preference should be more pronounced under high cognitive load than under low cognitive load. Despite our prediction, mood had no significant main effect on preference. This was true, regardless of cognitive load.

However, it should be noted that a three-way interaction of mood, cognitive load, and goal prime was significant. This suggests that the effect of mood on preference should be discussed in relation to not only the cognitive load, but also the goal prime. Please refer to the discussion for H1 about this three-way interaction.

2.6.5. Hypotheses 5 and 6

The main effect of goal prime on implicit attitude was not significant, regardless of cognitive load, rejecting H5 and supporting H6. However, as the three-way interaction of mood, goal prime, and cognitive load on implicit attitude was significant, the effect of goal prime on implicit attitude should be addressed, not only in relation with cognitive load, but also with mood. Please see the next section for the discussion of this three-way interaction (Hypothesis 7).

2.6.6. Hypothesis 7

We predicted that as mood decreases (more negative), the implicit attitude for decadent brands increases (H7a). In addition, this effect should be less pronounced under low cognitive load than under high cognitive load (H7b). As the main effect of mood and the interaction effect

of mood and cognitive load on implicit attitude were not significant, H7a and H7b were rejected overall.

However, the three-way interaction among mood, goal prime and cognitive load on implicit attitude was significant. Thus, the effect of mood on implicit attitude should be discussed in relation to not only cognitive load, but also to goal prime. Under a high cognitive load, the interaction between mood and goal prime on implicit attitude was not significant. Paired comparisons revealed that under a high cognitive load and the luxury goal prime, mood had a significant effect on implicit attitude ($F_{1,32} = 4.199$, $p = .049$, $\eta^2 = .116$), and individuals in a negative mood had a more favorable implicit attitude toward luxury brand than did those in a positive mood ($F_{1,32} = 4.199$, $p = .049$, $\eta^2 = .116$). Thus, H7a was supported under a high cognitive load and a luxury goal prime.

This effect of mood on implicit attitude is not explained by a goal-approach tendency in a positive mood and a goal-avoidance tendency in a negative mood. Instead, it may be explained by the failure to self-control in a negative mood. An individual in a negative mood may be less motivated to self-control, favoring immediate rewards (e.g., feeling better by purchasing luxury brands) to long-term benefits (e.g., saving money by purchasing frugal brands).

Under low cognitive load, the effects of mood, goal, nor the interaction between mood and goal on implicit attitude were significant. We did not expect the goal prime to affect implicit attitude under low cognitive load; therefore, this result is not surprising. Further analysis revealed that under a negative mood and a luxury goal prime, individuals under a high cognitive load had a more favorable implicit attitude toward the luxury brand than did those under low cognitive load ($F_{1,32} = 5.626$, $p = .024$, $\eta^2 = .150$); again, this effect may be explained by the lack of self-control in a negative mood. Lack of self-control should be more pronounced under high cognitive load, where an individual's conscious control becomes more impaired due to a

limited cognitive capacity. In sum, it seems that the three-way interaction of mood, cognitive load, and goal prime on implicit attitude was driven by a significant, main effect of mood under high cognitive load and luxury goal prime and the significant, main effect of cognitive load under luxury goal prime and negative mood.

2.6.7. Hypothesis 8

As discussed earlier, the means for implicit attitude were higher toward luxury brands in combination 1 than in combination 2 (.959 and .373, respectively). For combination 1, luxury and positive (categories on the left), as well as frugal and negative (categories on the right) were administered first in Steps 3 & 4 and switched later in Steps 6 & 7. In combination 2, frugal and positive (categories on the left), luxury and negative (categories on the right) were administered first in Steps 3 & 4 and switched later in Steps 6 & 7. Thus, support of H7 is an indication that administering combination 1 resulted in an improved implicit attitude toward a luxury brand over frugal brand than by administering combination 2.

This finding is consistent with the argument of Messner and Vosgerau (2010) that it takes effort for an individual to learn a new category combination in Steps 6 & 7 that differs from a previously learned category combination in Steps 3 & 4. Thus, in the IAT, the response times for Steps 6 & 7 should be consistently longer than for Steps 3 & 4. This results in a higher preference for luxury brands in combination 1 and a higher preference for frugal brands in combination 2. Thus, from a method point of view, it is important to counterbalance the combination of categories in the IAT.

2.6.8. Hypothesis 9

The goal prime did not have a significant effect on explicit attitude, supporting H9. Also, the goal prime did not have a significant interaction with either mood or cognitive load. These

results, in conjunction with that those for Study 2, is consistent with the notion that goal activation affects explicit attitude less than it affects implicit attitude.

2.6.9. Hypothesis 10

We have predicted that as mood decreases (more negative), explicit attitude for decadent brands increases (H10a); this effect is more pronounced under low cognitive load (H10b). H10a was supported for individuals with low materialism, but not for individuals with high materialism, regardless of cognitive load. Interestingly, a negative mood tends to impair self-control in individuals with low motivation (e.g., low materialism), but not in individuals with high motivation. This finding was true, regardless of goal prime.

2.6.10. Post-hoc Analysis 1 (Studies 1 & 2)

The three-way interactions among mood, goal, and cognitive load on preference ($F_{1,81} = 5.046$, $p = .027$, $\eta^2 = .059$) and on implicit attitude ($F_{1,32} = 4.223$, $p = .048$, $\eta^2 = .117$) were significant. The MODE model suggests that an individual's behavior is relatively automatic under low opportunity (e.g., high cognitive load), whereas an individual's behavior is relatively deliberate under high opportunity (e.g., low cognitive load). Thus, under a high cognitive load, the pattern of a two-way interaction of mood and goal prime on implicit attitude should be similar to that on preference. Please see Figures 2.19 & 2.20.

Under high cognitive load and a frugal goal prime, preference ($F_{1,81} = .068$, $p = .795$, $\eta^2 = .001$) or implicit attitude ($F_{1,32} = .135$, $p = .715$, $\eta^2 = .004$) were unaffected by mood (positive vs. negative). Both preference and implicit attitude plots, under a high cognitive load and frugal goal prime, show a similar, flat line across positive and negative mood, as expected. However, under a high cognitive load and a luxury goal prime, with both preference and implicit attitude significantly different across positive mood and negative mood, the direction of the plots lay in the opposite direction.

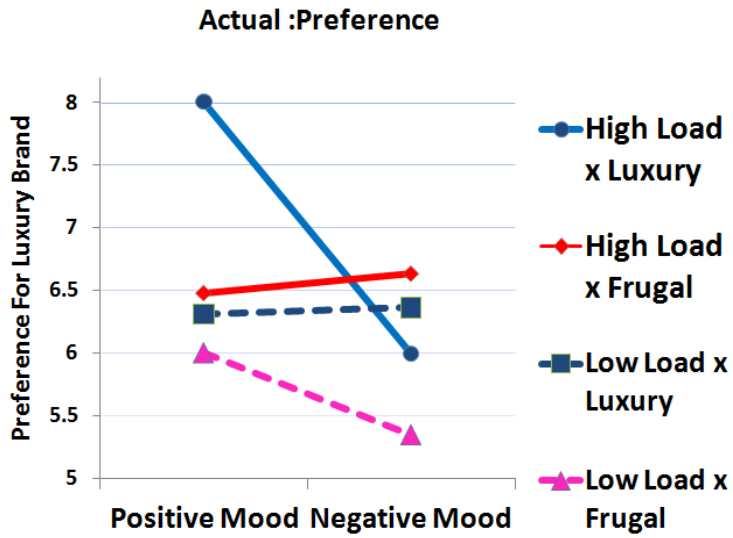


Figure 2.19
MOOD X COGNITIVE LOAD X GOAL PRIME ON PREFERENCE

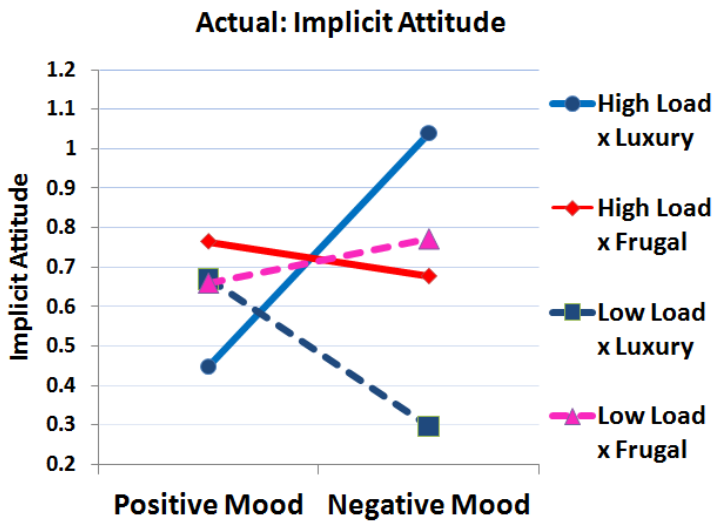


Figure 2.20
MOOD X COGNITIVE LOAD X GOAL PRIME ON IMPLICIT ATTITUDE

2.6.11. Post-hoc Analysis 2 (Studies 1 & 3)

Whereas a three-way interaction of mood, goal, and cognitive load on preference was significant ($F_{1, 81} = 5.046, p = .027, \eta^2 = .059$), the same three-way interaction of mood, cognitive load, and goal prime on explicit attitude was not significant ($F_{1, 34} = .265, p = .610, \eta^2$

= .008). A paired comparison on explicit attitude revealed that no two means in the three-way interaction plots were significantly different from one another (See Figure 2.21).

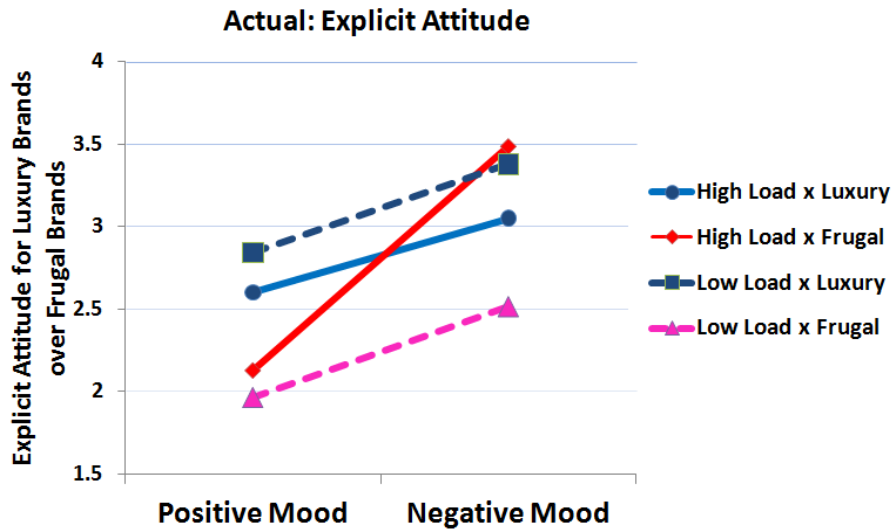


Figure 2.21
MOOD X COGNITIVE LOAD X GOAL PRIME ON EXPLICIT ATTITUDE

As discussed earlier, according to the MODE model, an individual’s behavior is relatively deliberate under high opportunity (e.g., low cognitive load). Thus, under a low cognitive load, the pattern of the two-way interaction of mood and goal prime on explicit attitude should be similar to that on preference. Under a low cognitive load, preference was indifferent to mood, either in a luxury goal prime ($F_{1,81} = .007, p = .934, \eta^2 = .000$) or in a frugal goal prime ($F_{1,81} = .906, p = .344, \eta^2 = .011$). Similarly, under low cognitive load, explicit attitude was indifferent of mood under either the luxury goal prime ($F_{1,34} = .309, p = .582, \eta^2 = .009$) or the frugal goal prime ($F_{1,34} = .546, p = .465, \eta^2 = .016$). This is illustrated as relatively flat lines (both low load x Frugal, low load x Luxury) across positive and negative mood conditions in preference and explicit attitude interactions. Please see Figures 2.19 and 2.21. Although under a low cognitive load, the main effect of goal was not significant, either on preference ($F_{1,42} = 1.958, p = .169, \eta^2 = .045$) or on explicit attitude ($F_{1,21} = 1.927, p = .180, \eta^2 = .084$), the low-

load and luxury plots were constantly above the low-load and frugal plots for both preference and explicit attitude plots.

2.6.12. Post-hoc Analysis 3 (Cognitive Load and Trait on Preference)

A two way interaction between cognitive load and materialism on preference was significant ($F_{1, 81} = 5.482, p = .022, \eta^2 = .063$). Further analysis revealed that in a low load condition, the main effect of materialism was significant ($F_{1, 42} = 8.563, p = .006, \eta^2 = .169$), with means of 5.319 for low materialism and 6.699 for high materialism, supporting H6a. In a high load condition, the main effect of materialism was not significant ($F_{1, 39} = .074, p = .788, \eta^2 = .002$). Please see Figure 2.22.

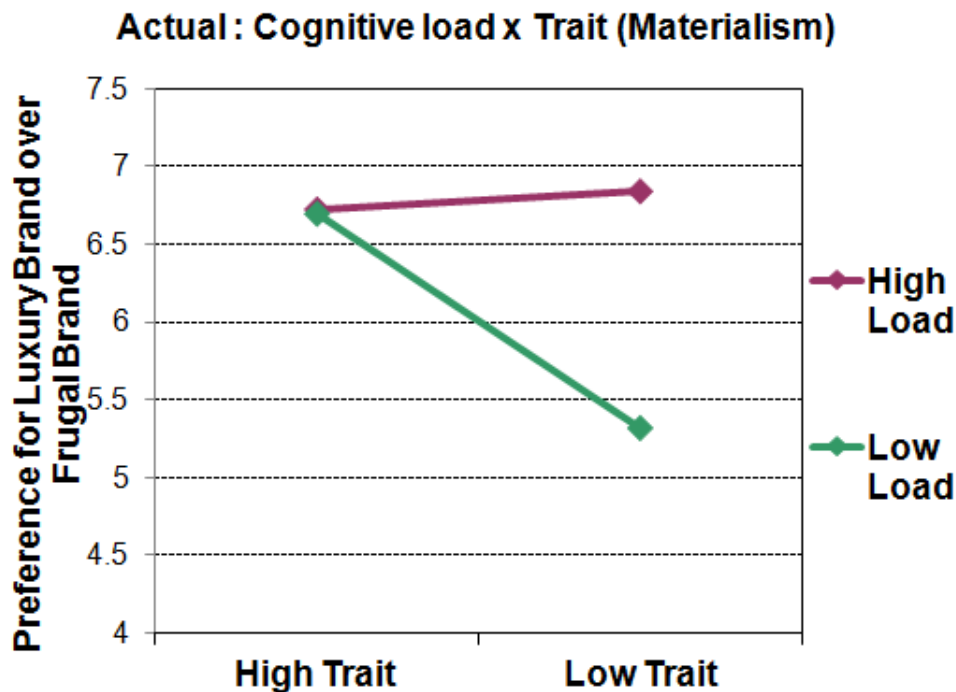


Figure 2.22
COGNITIVE LOAD X TRAIT (MATERIALISM) ON PREFERENCE

There was a significant two-way interaction of materialism and cognitive load on preference. Under low cognitive load, the main effect of materialism was significant, resulting in trait (materialism) consistent preference. Under high cognitive load, the main effect of

materialism was not significant. The result indicates that under a high cognitive load, where relatively automatic processing take place, it is a non-conscious goal prime, in conjunction with a mood that affects preference, but not trait (e.g., materialism). Then, under a low cognitive load, where relatively deliberative, conscious processing takes place, one's trait (e.g., materialism) may play more roles in shaping preference than a non-conscious goal prime.

Materialism is an example of self-schema or cognitive representations about self that originates from experiences of the individual (Markus 1977). Although the self-schema matching paradigm suggests that an individual tends to form favorable attitudes toward messages or products consistent with self-schema or the individual's personality characteristics, the mechanism of this effect is not clear; thus, the significance of its impact on persuasion is undetermined (Wheeler et al. 2005).

One explanation for this phenomenon is that especially when an individual's involvement is low, consistency between presented messages or objects and self-schema works as both positive cues and as heuristics, thereby improving the individual's attitude towards the messages or objects (Petty and Cacioppo, 1986; Petty, Wheeler, and Bizer, 2000; Wheeler et al. 2005). Thus, when an individual with a high, frugal-spending self-schema is presented with frugal brands (i.e., self-schema matching), his or her favorability toward these brands are enhanced, resulting in a more favorable explicit attitude toward frugal brands than toward luxury brands.

Similarly, an individual with a high materialism self-schema would prefer luxury brands to frugal brands, because luxury brands, instead of frugal brands, would match his or her self-schema. However, under a high cognitive load, the goal prime, instead of the trait, should guide an individual's preference or behavior. Thus, only in a low cognitive load condition, where a goal prime may have less influence on an individual's preference, a materialism trait should facilitate the trait-consistent preference.

2.6.13. Overall Implication (All Studies)

The effects of goal prime on both preference and implicit attitude were moderated by mood and cognitive load. However, the goal prime, mood, and cognitive load had no significant effects on explicit attitude. This indicates that the effect of goal prime on preference is sometimes mediated by an implicit attitude, rather than by an explicit attitude.

However, although we predicted that under a high cognitive load, the patterns of two-way interactions of mood and goal prime on implicit attitude and preference would be similar, this was not always true. Given a luxury goal prime under a high cognitive load, the effect of the goal prime on implicit attitude and preference lay in the opposite direction.

In addition, these studies were intended to test the effect of the goal prime, mood, and cognitive load on each dependent variable separately to see whether these manipulations had an impact not only on preference, but also on explicit or implicit attitudes. Thus, we did not test for a simultaneous effect of these manipulations on three dependent variables. We find that the effect of the goal prime becomes more pronounced under high cognitive load. Thus, in order to understand the effect of the goal prime and mood on both preference and implicit/explicit attitude, we conduct two different studies in the following chapter.

CHAPTER 3. ESSAY THREE

3. 1. Introduction

In Chapter 2, we found that the effect of goal primes on preference and implicit attitude is moderated by mood and cognitive load. However, goal primes do not affect explicit attitude. Since the effect of goal prime was more pronounced under a high cognitive load as predicted, Chapter 3 focuses on the high cognitive load condition. Extending Chapter 2, we investigate whether the effects of goal primes on preference are mediated by implicit attitude, rather than explicit attitude. Further, this chapter investigates the effect of the goal prime on preference in the context of decadent and wholesome food brand consumption.

The effects of non-conscious goal primes on food preference is an important topic not only managerially, but also for society's well-being. For example, 60 percent of Americans are considered obese or overweight (Thaler and Sunstein, 2008, p. 7). As consumers become more health conscious, many companies are accelerating their efforts to develop healthier foods. For instance, PepsiCo hopes to triple the sales of healthier food within the next 10 years (Bymes, 2010).

Despite intentions to eat healthier foods, consumers often feel compelled to purchase unhealthy foods (Weijzen, Graaf, and Dijksterhuis, 2008). Also, social marketing that attempts to persuade people to eat healthy has not seen much success (Harker, Sharma, Harker, and Reinhard, 2010), resulting in a continuance of obesity and other health issues associated with eating unhealthy food.

In sum, we investigate how goal primes may result in prime-consistent preferences. In the context of consuming decadent vs. wholesome brands, we study (1) how goal primes non-consciously guide preference; (2) how the goal prime preference relationship is mediated by

implicit attitude and explicit attitude; and (3) how mood affects implicit/explicit attitude and preference.

3.2. CONSTRUCT DEFINITIONS

3.2.1. Goal Prime

Goal primes are associated with a non-conscious activation of a cognitive structure that includes the ideal state that an individual wishes to achieve, its means to reach that state, and its associated information (Laran, Jeniszewski, and Cunha Jr., 2008, Kruglanski et al. 2002, Shah and Kruglanski, 2003; Custers and Aarts, 2005). We employed two types of goal primes, a decadent and a wholesome goal prime. Whereas a decadent goal is associated with indulging oneself, a wholesome goal is associated with promoting the well-being of an individual (Merriam-Webster, 2010).

3.2.2. Mood

Mood is defined as relatively long lasting general affective states without a particular referent (Linnenbrink and Pintrich, 2004, p58). In this study, we have two types of mood based on valence: a positive mood vs. a negative mood. A positive mood includes such affective states as happy, pleased, and satisfied. A negative mood includes such affective states as unhappy, sad, and nervous (See Watson and Tellegen (1985) for the detailed description of mood structure).

3.2.3. Cognitive Load

Cognitive load is associated with the use of a working memory as a system, where task-related information is maintained while conducting a certain task (Shah and Miyake, 1999).

3.2.4. Implicit Attitude

Implicit attitudes are evaluations that (a) are formed from an origin of which an individual is not aware; (b) are automatically activated; and (c) results in uncontrollable outcomes (Greenwald and Banaji, 1995, Wilson, Lindsey and Schooler, 2000).

3.2.5. Explicit Attitude

An explicit attitude is defined as a conscious evaluative judgment about a certain object with a known origin (Gawronski and Bodenhausen, 2006).

3.2.6. Preference

Preference is associated with the degree that an individual likes one alternative more than another alternative (Merriam-Webster, 2010). Whereas choice is discrete (e.g., the choice of one brand over another brand), preference is associated with the extent to which an individual likes one brand more than another brand.

3.2.7. Self-Control

Self-control is defined as “a capacity to change and adapt the self so as to produce a better, more optimal fit between self and world (e.g., Rothbaum et al., 1982) (c.f., Tangney, Baumeister, and Boone, 2004).”

3.2.8. Category Combination

In this study, a category combination refers to alternative combinations of categories in the IAT. One can combine luxury and positive (on the left) and frugal and negative (on the right) in Blocks 3 & 4, and then frugal and positive (on the left) and luxury and negative (on the right) in Blocks 6 & 7 (i.e., combination 1). Another alternative is to combine frugal and positive (on the left) and luxury and negative (on the right) in Blocks 3 & 4, and then luxury and positive (on the left) and frugal and negative (on the right) in Blocks 6 & 7 (i.e., combination 2).

3.3. HYPOTHESES

3.3.1. The Effect of Goal Prime on Preference

3.3.1.1. Hypothesis 1 (Effect of Goal Prime on Preference)

As discussed in Chapter 2, the automotive model (Bargh, 1990) suggests that environmental features not only activate consumer goals, but also cognition and behavior

without their awareness. Thus, a supraliminal goal prime should first activate relevant goals (wholesome or decadent) and guide preferences toward wholesome or decadent brands. Prime words that are associated with either wholesome or decadent goals should activate related concepts, eventually activating higher order goals of wholesome or decadent. As the accessibility of the wholesome (decadent) goals increase, the preference for wholesome (decadent) brands should increase, resulting in a goal consistent preference.

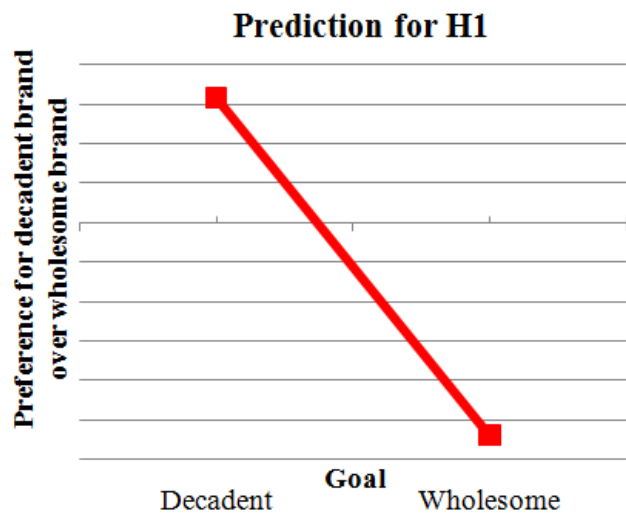


Figure 3.1
PREDICTION FOR H1 (Study 1 & 2)

The MODE model suggests that when individuals lack opportunity, they are more likely to employ automatic attitude-behavior processes regardless of motivation. Thus, when cognitive resources are limited (i.e., high cognitive load condition), an individual tends to follow automatic attitude-behavior processes. The term cognitive resources means the availability of working memory. Working memory refers to a system where task-related information is maintained while conducting a cognitive-task (Shah and Miyake 1999). In order to perform a certain task, working memory requires a certain amount of resources (Barrouillet, Bernardin, Portrat, Vergauwe, and Camos 2007). Therefore, an automatically activated goal may guide one's behavior, such as brand preference when the availability of cognitive resources is limited. Thus,

H1: Under high cognitive load, consumers prefer brands consistent with the goal prime.

(Please see Figure 3.1 for prediction.)

3.3.1.2. Hypothesis 2 (Goal Activation vs. Semantic Cue Activation Explanations)

Since the preference task in the study is hypothetical and not an actual choice, we do not expect a satiation effect with prime-consistent preference behavior. However, if the prime is only activating prime-related cues in associative networks, the trend of prime-consistent preference in repeated trials should diminish over time, due to memory decay. Thus, if the prime is activating a goal, prime-consistent preference should not have an order effect. However, if the prime is activating semantic cues, the effect of the prime should diminish over time and prime-consistent preference should have an order effect. Please see Figure 3.2 for prediction. Thus, similar to our prediction in Chapter 2, we have the following two competing hypotheses;

H2: Consumers under high cognitive load prefer brands consistent with the goal prime such that, (a, goal activation explanation) the effect is constant with repeated preference measures over time, or (b, semantic-cue activation explanation) the effect diminishes with repeated preference measures over time.

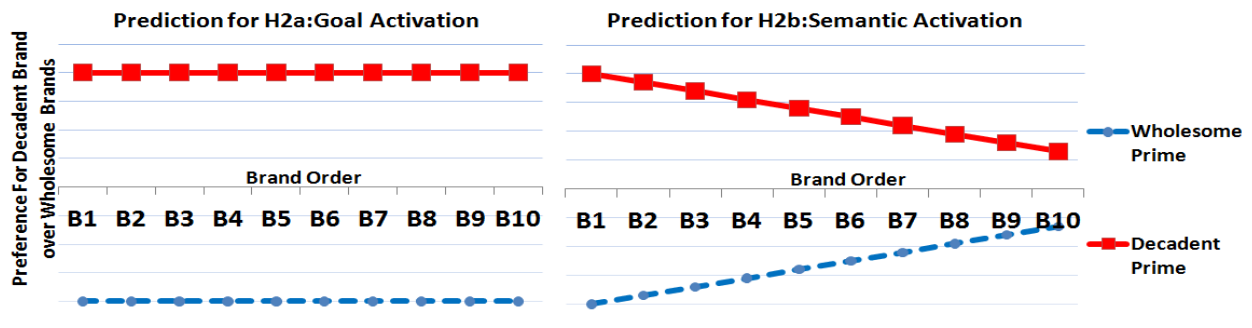


Figure 3.2
PREDICTION FOR H2

3.3.2. Mediation Tests

We will test the mediating roles of explicit attitude and implicit attitude on the relationship between the goal prime and preference. First, in Study 1, we will test the mediating

roles of implicit attitude on the relationship between the goal prime and preference (Please see Figure 3.3). Then in Study 2, we will test the mediating roles of explicit attitude on the relationship between the goal prime and preference (Please see Figure 3.4). Subsequent discussions will introduce the path models and associated hypotheses for Study 1 and Study 2.

3.3.2.1. Hypothesis 3 (The Direct Effect of Goal Prime on Preference)

According to the theory of goal systems, where goals are considered part of the cognitive system, the goal prime should activate goals, resulting in an attitude consistent with the goal prime and then, lead to preference consistent with the attitude. Ferguson and Porter (2009) argued that the effect of the goal prime should be captured by the implicit attitude, but not by the explicit attitude. Thus, the effect of goal prime on preference should be fully mediated by implicit attitude (Study1). Thus, there is no direct effect of the goal prime on preference (See Figure 3.3).

H3a: There should be no direct effect of the goal prime on preference.

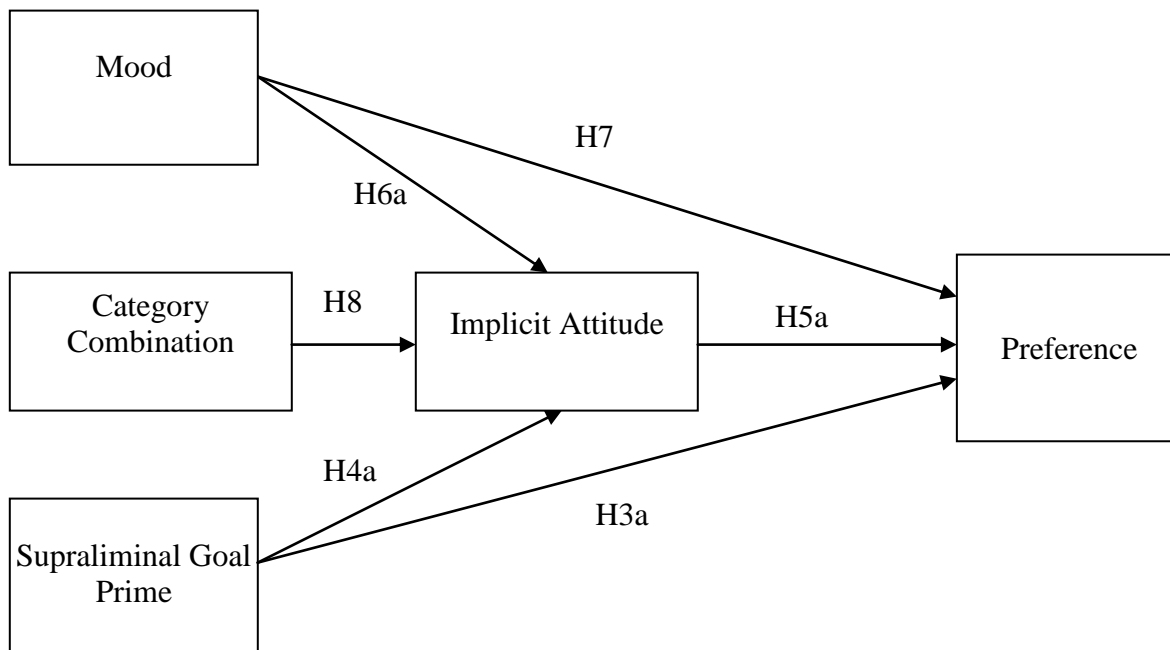


Figure 3.3
PATH MODEL (STUDY 1)

However, explicit attitude should not mediate the effect of the goal prime on preference (Study 2). Instead, the goal prime should have a direct effect on preference (see Figure 3.4). Thus,

H3b: There should be a positive direct effect of the goal prime on preference.

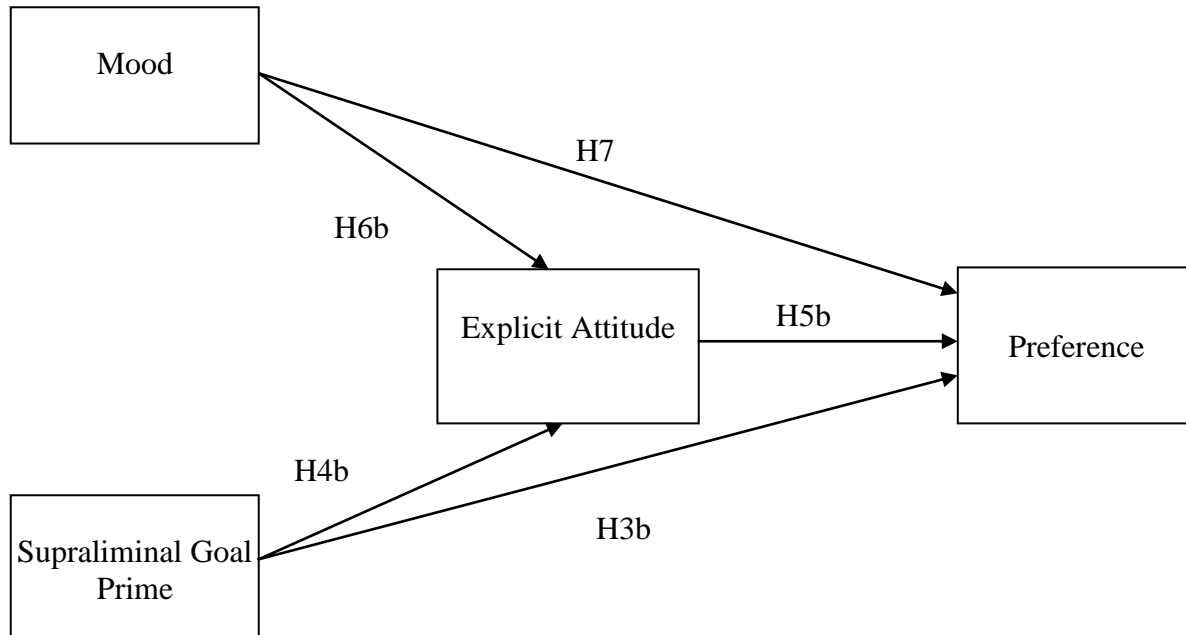


Figure 3.4
PATH MODEL (STUDY 2)

3.3.2.2. Hypothesis 4 (The Effect of Goal Prime on Attitudes)

Goals (i.e., a higher order more abstract goal than subordinate goals), subordinate goals, and means to achieve goals are mental representations, connected by associative links in memory (Kruglanski et al. 2002). As the automotive model suggests, when goals and their related environmental features are frequently and consistently associated with one another, these goals and environmental features are associatively linked together in memory (Bargh, 1990). Thus, as a goal prime non-consciously activates associated goals, it may also activate its means.

In other words, to achieve a wholesome (decadent) goal, one needs to consume wholesome (decadent) food or brands. So, wholesome (decadent) goals may be linked together with their means (e.g., wholesome (decadent) brands) in memory. As goals are activated, the

implicit evaluation for its means should increase. Consistent with this notion, Ferguson and Bargh (2004) suggested that when one is pursuing a goal, one has a positive, implicit evaluation toward objects that are strongly related to the goals. Please see Figure 3.3 for prediction. Thus,

H4a: Under a high cognitive load, an implicit attitude is consistent with the goal prime.

Whereas activation of a goal may affect how one spontaneously evaluates goal-related objects, thereby resulting in a positive implicit attitude toward these objects, it should affect explicit evaluation less (Ferguson and Porter, 2009; Ferguson and Bargh 2004). Ferguson and Porter (2009) believed that motivational properties should be captured uniquely by implicit attitude, but not by explicit attitude. When one's goal is non-consciously activated, one is not aware of pursuing a goal. Thus, the effect of a non-consciously activated goal on explicit attitude should be limited. Please see Figure 3.4 for prediction. Thus,

H4b: Under a high cognitive load, an explicit attitude is unaffected by the goal prime.

3.3.2.3. Hypothesis 5 (Explicit and Implicit Attitudes on Preference)

The MODE model suggests that when opportunity is limited (e.g., limited cognitive capacity), automatically activated attitudes will guide judgment and behavior. Even when one's motivation is high, consumers with low opportunity limit deliberative processing, where behavior is guided more by explicit attitude than by implicit attitude. Thus, regardless of one's motivation, consumers with low opportunity employ automatically activated attitudes and behaviors. In this study, where all subjects are under high cognitive load, the preference for decadent brands over wholesome brands would be better guided by implicit attitude than by explicit attitude. Please see Figures 3.3 and 3.4. Thus,

H5: Under a high cognitive load, (a) implicit attitude has a positive effect on preference; (b) explicit attitude has a positive effect on preference; and (c) implicit attitude more strongly affects preference than an explicit attitude.

3.3.2.4. Hypothesis 7 (The Effect of Mood on Preference)

Studies suggest that individuals in negative moods lack self-control, thus abandoning healthy behaviors or wholesome eating behavior, since negative moods induce instant gratification (Tice, Bratslavsky, and Baumeister, 2001). Leith and Baumeister (1996) suggested that this is because individuals in negative moods tend to exhibit riskier behaviors than those in positive moods, hoping for better immediate outcomes (e.g., eating unhealthy, tasty food, hoping to improve the mood), but, such behavior frequently results in costly, long-term outcomes (e.g., getting unhealthy or gaining weight). Thus, an individual in a negative mood may prefer decadent brands to wholesome brands, compared to an individual in a positive mood. Please see Figures 3.3 and 3.4 for this prediction. An individual in a negative mood often fails to resist the temptation of immediate rewards (i.e., prefers decadent brands to wholesome brands) and thereby sacrifices the long-term benefits (i.e., staying healthy). Thus,

H7: Under a high cognitive load, as mood decreases (more negative), the preference for decadent brands increases.

3.3.2.5. Hypothesis 6 (The Effect of Mood on Attitude)

An individual in a negative mood prioritizes immediate rewards (e.g., eating decadent, perhaps unhealthy food) over long-term benefits (e.g., staying healthy), more so than an individual in a positive mood. Thus, an individual in a negative mood may have more favorable implicit and explicit attitudes toward decadent brands than wholesome brands compared to an individual in a positive mood. Please see Figures 3.3 and 3.4. Thus,

H6: Under a high cognitive load, as mood decreases (more negative), (a) an implicit attitude for decadent brands increases; and (b) an explicit attitude for decadent brands increases.

3.3.2.6. Hypothesis 8 (Order of the IAT Blocks)

Messner and Vosgerau (2010) studied order effects in the administration of the IAT blocks on the IAT overall results. In the IAT, two categories (i.e., decadent and wholesome) are paired with either positive or negative words. For instance, Blocks 3 & 4 have wholesome and positive on the left, with decadent and negative on the right. These pairs are then switched in Blocks 6 & 7, with decadent and positive on the left and wholesome and negative on the right. Messner and Vosgerau (2010) argued that the order of this combination affects the response time of this categorization task. In other words, one can combine decadent and positive (on the left) and wholesome and negative (on the right) in Blocks 3 & 4, and then wholesome and positive (on the left) and decadent and negative (on the right) in Blocks 6 & 7 (i.e., we call this combination 1). Another alternative is to combine wholesome and positive (on the left) and decadent and negative (on the right) in Blocks 3 & 4, and then decadent and positive (on the left) and wholesome and negative (on the right) in Blocks 6 & 7 (i.e., we call this combination 2). In Blocks 6 & 7, a participant learns a new category combination that is inconsistent with that in Block 3 & 4. Messner and Vosgerau (2010) argued that this new combination results in a slower response time in Blocks 6 & 7 than in Blocks 3 & 4, due to cognitive inertia. Whenever an individual learns a new rule that completely differs from a rule learned earlier, it takes more time to learn and follow that rule, due to cognitive inertia. Regardless of the compatibility of word pairing in either combination 1 or combination 2, the categorization task in Block 6 & 7 takes more time.

In combination 1, the tendency for longer response times for Blocks 6 & 7, compared to Blocks 3 & 4, results in stronger associations between decadent and positive, and between wholesome and negative, thus suggesting a stronger preference for decadent brands to wholesome brands, than a true preference. For combination 2, the tendency for longer response times for Blocks 6 & 7 than Blocks 3 & 4 results in stronger associations between wholesome and positive, and between decadent and negative, suggesting a weaker preference of decadent brands to wholesome brands, than a true preference (Please see Figure 3.3).

H8: Under a high cognitive load, compared to IAT combination 2, the IAT combination 1 results in a more favorable implicit attitude toward decadent brands than toward wholesome brands.

3.4 METHODS

3.4.1. Design

Subjects engage in multiple tasks on a computer to collect response latencies. A 2 (mood: positive, negative) by 2 (goal: wholesome, decadent) between-subject design is employed. All subjects are given the high-cognitive load task. In Study 1, the dependent variable was implicit attitude and preference. In Study 2, the dependent variable was explicit attitude and preference.

3.4.2 Manipulations

3.4.2.1. Mood

Subjects were asked to recall the happiest or unhappiest event in each person's life in an open-ended question. They were asked to describe the event as vividly as possible, including what happened on that day, and how the event made them feel. This mood manipulation was successfully used in several other studies (Schwarz and Clore, 1983; Fishbach and Labroo, 2007; Patrick and Labroo, 2009).

3.4.2.2. Goal

Similar to the study in Essay 2, supraliminal priming is employed (Chartrand and Bargh, 1996) to manipulate the goal by using different prime words. Subjects were given a scrambled sentence completion task. They constructed a grammatically correct four-word sentence from a five-word jumble. Among the twelve jumbles in total, ten jumbles contained a prime word associated with either a decadent goal or a wholesome goal. Prime words for the wholesome goal included nutritious, healthy, hearty, and others. Those for the decadent goal included luxury, rich, lavish, and others (See Tables 3.1 for the full list of prime words). For instance, from the five-word jumble, “be will swear *nutritious* they,” subjects are expected to construct a grammatically correct sentence “they will be very *nutritious*.” (The prime word is italicized for illustration purposes; this was not the case in the actual experiment).

3.4.2.3. Cognitive Load

All subjects are given a high load condition and are asked to memorize an eight digit number. Subjects are asked to keep the number in mind throughout the experiment. At the end of the study, they are asked to recall the number by choosing the correct number from a given list.

3.4.3 Measures

3.4.3.1. Implicit Attitude

The implicit association test (IAT) is employed as an implicit attitude measure. In IAT, subjects engage in two categorization tasks. We follow the same procedure employed in Greenwald, McGhee, and Schwartz (1998). Subjects are shown wholesome and decadent brand names, together with positive and negative words. First, the subjects are asked to categorize the word as either decadent or positive (located on left label), or as wholesome or negative (located on right label) (i.e., Task 1). When a brand name or a word is supposed to be categorized as labels on the left (i.e., decadent and positive), subjects are expected to push “E” on the key board.

Table 3.1
SCRAMBLED SENTENCES FOR GOAL MANIPULATION

<i>Decadent</i>	<i>Wholesome</i>
ball the throw toss silently	ball the throw toss silently
be will swear <i>rich</i> they	be will swear <i>nutritious</i> they
ate she it <i>gourmet</i> all	ate she it <i>well-being</i> all
he <i>exquisite</i> drops only seems	he <i>healthy</i> drops only seems
somewhat <i>lavish</i> I was retired	somewhat <i>natural</i> I was retired
picked throw apples hardly the	picked throw apples hardly the
should now withdraw <i>pleasure</i> we	should now withdraw <i>beneficial</i> we
they obedient him often meet	they obedient him often meet
<i>luxury</i> it hides there over	<i>wholegrain</i> it hides there over
is it <i>fancy</i> plant so	is it <i>pure</i> plant so
send I mail it over	send I mail it over
<i>extravagant</i> alone very are they	<i>nourishing</i> alone very are they
sky the seamless blue is	sky the seamless blue is
food give keep <i>decadent</i> the	food give keep <i>wholesome</i> the
him was <i>indulgent</i> it always	him was <i>hearty</i> it always

Note: Prime words are italicized only for illustration purposes in the table.

Table 3.2
SEQUENCE OF TRIAL BLOCKS IN THE IAT

<i>Block</i>	<i>No. of Trials</i>	<i>Functions</i>	<i>Items assigned to left-key response</i>	<i>Items assigned to right-key response</i>
1	10	Practice	Decadent brand names	Wholesome brand names
2	10	Practice	Positive words	Negative words
3(or 6)	20	Test	Positive words + Decadent brand names	Negative words + Wholesome brand names
4(or 7)	20	Test	Positive words + Decadent brand names	Negative words + Wholesome brand names
5(or 3)	10	Practice	Wholesome brand names	Decadent brand names
6(or 4)	20	Test	Positive words + Wholesome brand names	Negative words + Decadent brand names
7	20	Test	Positive words + Wholesome brand names	Negative words + Decadent brand names

When a brand name or a word is supposed to be categorized as labels on the right (i.e., wholesome and negative), subjects are expected to push “I” on the key board. Next, they are

asked to categorize the word, either as wholesome or positive (located on left label), or as decadent or negative (located on right label) (i.e., Task 2). The response times for these categorization tasks are measured to compute the average response times for these two tasks.

When an individual's association between decadent (wholesome) brands and positive (negative) words is stronger than that between decadent (wholesome) brands and negative (positive) words, we assume that the average response time for Task 1 is shorter than that for Task 2. Thus, when the average response time for Task 2 minus the average response time for Task 1 is positive, we can assume that this individual has a preference for decadent brands over wholesome brands.

Messner and Vosgerau (2009) argued that researchers should take order effects into consideration in the IAT. In the IAT, two categories (e.g., wholesome and decadent) are paired with either positive or negative words. For instance, Blocks 3 & 4 have wholesome and positive on the left and decadent and negative on the right. These pairs are then switched in Blocks 6 & 7, with decadent and positive on the left and wholesome and negative on the right. Messner and Vosgerau (2009) argued that the order of this combination affects the response time of this categorization task. In other words, we can combine decadent and positive (on the left) and wholesome and negative (on the right) in Blocks 3 & 4, and then wholesome and positive (on the left) and decadent and negative (on the right) in Blocks 6 & 7 (i.e., we call this combination 1).

Another alternative is to combine wholesome and positive (on the left) and decadent and negative (on the right) in Blocks 3 & 4, and then decadent and positive (on the left) and wholesome and negative (on the right) in Blocks 6 & 7 (i.e., we call this combination 2). In Blocks 6 & 7, a participant learns a new category combination that is inconsistent with that in Blocks 3 & 4 which, Messner and Vosgerau (2009) argued, results in a slower response time in Blocks 6 & 7 than in Blocks 3 & 4. This effect should be observed, regardless of the

compatibility of the category combination. Thus, the argument goes somewhat against the previous discussion about the compatible and incompatible tasks. In order to account for such order effects, we counterbalanced these two types of categorization (i.e., combination 1 and combination 2).

An implicit attitude will be computed following the algorithm developed by Greenwald, Nosek, and Banaji (2003). Among the data from seven blocks (see Table 15 for the detail of each block), the analysis will utilize data only from Blocks 3, 4, 6, and 7. First, data considered as outliers will be eliminated; this would include a trial where the response latency is beyond 10,000 ms or trials where the responses are less than 300ms, accounting for more than 10% of trials.

The former will be eliminated because one single trial is unlikely to take more than 10,000 ms if a subject is paying full attention to the task. Thus, it is possible that a subject is engaged in another, unrelated task (e.g., thinking of something else). The latter is eliminated because trials with less than 300ms latencies are more likely to be considered as random responses (i.e., not following the instructions).

After this treatment, the mean for correct response latencies for each block will be calculated. One standard deviation for all trials of Blocks 3 and 6, and another standard deviation for all trials of Blocks 4 and 7 will be computed. Response latencies for incorrect answers will be replaced with the block mean (previously computed), plus 600ms. Then, for each block (i.e., Blocks 3, 4, 6 and 7), we average the response latencies, including the original latency for correct responses, as well as the replaced latency for incorrect responses, thus resulting in M_{b3} M_{b4} M_{b6} and M_{b7} . Then, we compute the differences between M_{b6} and M_{b3} ($M_{b6} - M_{b3}$) and between M_{b7} and M_{b4} ($M_{b7} - M_{b4}$). Then, we divide each value by its standard deviation, resulting in $(M_{b6} - M_{b3}) / (SD_{b6\&b3})$ and $(M_{b7} - M_{b4}) / (SD_{b7\&b4})$. Finally, we average the two values.

3.4.3.2. Explicit Attitude

For explicit attitude measures, 9-point scales (good vs. bad, like vs. dislike, and favorable vs. unfavorable) were used to measure explicit attitude for each brand (frugal or luxury). Subjects evaluated five wholesome brands and five decadent brands, one at a time. Subjects chose one to indicate an unfavorable attitude (i.e., bad, dislike, unfavorable) and chose nine to indicate a favorable attitude (i.e., good, like, and favorable). Summated scales for three items were computed both for wholesome brands and decadent brands. Then a factor score was computed for the five wholesome brands, resulting in one component. Another factor score was computed for the five decadent brands, resulting in one component. Finally, the factor score for wholesome brands was subtracted from the factor score for luxury brands.

3.4.3.3. Preference

Subjects were asked to indicate preference between two brands (one wholesome and another decadent) in several product categories for ten pairs of brands. Thus, there were ten decadent brands and ten wholesome brands. As may be seen in Tables 3.3 and 3.4, half of these brands (i.e., five decadent and five wholesome brands) were the same brands used either in the explicit attitude measures in Study 2 or the implicit attitude measure in Study 1. The other half of these brands was only used in the preference task. The latter half of these brands was added to minimize the order effect between the preference task and the IAT/explicit attitude task, but was not used in the analysis, except for the order analysis. In the order analysis (see Table 3.8), we needed to analyze all the brands from the first preference task to the tenth preference task. Thus, the entire ten pairs of wholesome and decadent brands were used for the analysis.

For five pairs of brands, subjects responded to “1” when they preferred the wholesome brand, “5” when their preference for two brands was indifferent, or “9” when they preferred the decadent brand. For the other five pairs of brands, subjects selected “1” when they preferred the

decadent brand, “5” when their preference for two brands was indifferent, or “9” when they preferred the wholesome brand. Preference scores for the latter five pairs of brands were reversed. That is, in the analysis, “1” indicates a preference for frugal brands, while “9” indicates a preference for decadent brands over frugal brands.

3.4.3.4. Mood

Four items with 9-point scales (irritable vs. pleased, sad vs. happy, depressed vs. cheerful, and bad mood vs. good mood) were used to measure mood.

3.4.3.5. Trait (Self-control)

We employed a brief version of the self-control trait measures from Tangney, Baumeister, and Boone (2004). Self-control is “widely regarded as a capacity to change and adapt the self so as to produce a better, more optimal fit between self and world” (e.g., Rothbaum et al., 1982) (c.f., Tangney, Baumeister, and Boone, 2004).

3.4.3.6. Cognitive Load

At the end of each study, participants were asked to select the 8-digit number shown in the beginning of the study (i.e., 89532316) among a list of nine numbers.

3.4.4 Material Pretests

3.4.4.1. Pretest 1: Selecting Brands

A pretest was conducted to choose brands considered to be either decadent or wholesome. Fifty undergraduate students completed the pretest. One group was asked to evaluate 35 potentially wholesome brands and another group was asked to evaluate 35 potentially decadent brands. These participants were asked to evaluate each brand in terms of the level of association with four words: “wholesome,” “decadent,” “familiarity” and “positivity.” For each brand, participants were asked to indicate the extent to which they agreed with the following statements: (1) ---- is “wholesome”, (2) --- is “decadent,” (3) --- is “familiar,” and (4) Overall, I have a

positive attitude towards ----. The scale was a 9-point item from 1, strongly disagree to 9, strongly agree.

Then, ten wholesome brands with means above mid-point in wholesome association (mean ranged from 6.75 to 7.71), and ten decadent brands with the means at least above the mid-point in decadent association (mean ranged from 5.12 to 6.47) were selected. Repeated measures ANOVA revealed that wholesome brands were rated as more wholesome ($M=7.089$) than decadent brands ($M=4.833$) ($F_{1, 50} = 19.570, p < .001, \eta^2 = .281$). All brands were relatively familiar and positive, with the mean above a mid-point of five. Decadent brands selected include Ben & Jerry’s, Starbucks, Haagen-Dazs, Dove-Chocolate, Coke, and others (Please see Tables 3.3 for the decadent brand names and detailed results). Wholesome brands selected included Cheerios, V8, Special-K, Nature Valley, Quaker Oats and others. Please see Tables 3.4 for the wholesome brand names and detailed results.

Table 3.3
Pretest Results: Brand Name Association for Decadent Brands

	<i>Decadent</i>	<i>Wholesome</i>	<i>Familiarity</i>	<i>Positive</i>	<i>Category</i>
Ben & Jerry’s	6.47	5.97	7.24	7.03	At. and Pref.
Haagen-Dazs	6.26	5.59	5.76	6.06	At. and Pref.
Godiva	6.06	5.24	5.71	6.24	At. and Pref.
Snickers	6.03	5.94	8.35	7.32	At. and Pref.
Pepperidge Farm Cookie	5.59	5.88	6.50	6.65	At. and Pref.
Wolfgang Puck	5.12	5.06	5.09	5.26	Only Pref.
Starbucks	6.47	6.15	8.24	6.85	Only Pref.
Coke	6.21	6.24	8.71	7.91	Only Pref.
Krispy Kreme	5.53	4.62	7.44	6.00	Only Pref.
Wonka	5.32	5.15	6.76	6.26	Only Pref.

Note: 9 point scale: 1, Strongly Disagree to 9, Strongly Agree. At.: Used in Attitude Measure. Pref.: Used in Preference Measure.

3.4.4.2. Pretest 2: Generating Prime Words

Another pretest was conducted to generate prime words for the goal manipulation (wholesome vs. decadent). In Pretest 2, 40 undergraduate students completed a free recall task

Table 3.4
Pretest Results: Brand Name Association for Wholesome Brands

	<i>Wholesome</i>	<i>Decadent</i>	<i>Familiarity</i>	<i>Positive</i>	<i>Category</i>
Dannon	6.89	5.36	7.18	7.00	At. and Pref.
Yoplait	6.71	5.36	6.86	7.00	At. and Pref.
Cheerios	7.71	5.25	7.96	7.64	At. and Pref.
Quaker Oats	7.29	4.89	7.50	7.32	At. and Pref.
Fiber One	6.68	5.18	5.96	5.61	At. and Pref.
Healthy Choice	6.89	5.36	6.54	6.36	Only Pref.
V8	7.64	5.79	7.64	7.04	Only Pref.
Dole	6.93	5.57	7.46	7.25	Only Pref.
Kashi	6.61	4.93	5.04	5.68	Only Pref.
Special K	7.54	5.86	7.39	7.25	Only Pref.

Note: 9 point scale: 1, Strongly Disagree to 9, Strongly Agree. At.: Used in Attitude Measure. Pref.: Used in Preference Measure.

for two given words (i.e., wholesome and decadent). They were asked to list a set of five words associated with wholesome, as well as another set of five words associated with decadent. We also selected a series of words from the free association norms database provided by Nelson, McEvoy and Schreiber (1998). This database provides results from free word association tests for many words, including healthy, luxury, rich, elegant, and others. We also selected some synonyms of wholesome and decadent. In this way, we constructed a list of 30 prime words for wholesome and decadent goals.

3.4.4.3. Pretest 3: Validating Prime Words

In the subsequent Pretest 3, another set of participants, forty-six undergraduate students, evaluated the prime words, generated in Pretest 2, on its valence and on its strength of association with either “wholesome” or “decadent.” Finally, we have selected ten prime words for each “wholesome” and “decadent” goal prime. The prime words for the “decadent” goal included luxury, rich, lavish, fancy, extravagant, exquisite, indulgent, pleasure, gourmet, and sophisticated. The participants rated these prime words as associated with “decadent,” with the means ranging from 6.28 to 6.83 on a 9-point scale (1, Not at all associated with "Decadent" to 9,

Strongly associated with "Decadent"). The ten prime words were rated as positive with the means ranging from 6.5 to 8 on a 9 point scale (1, negative to 9, positive). Please see Table 3.5 for the detail.

Table 3.5
PRIME WORDS FOR DECADENT GOAL (N=46)

<i>Prime Words</i>	<i>Mean *</i>	<i>Standard Error</i>	<i>Valence</i>
Luxury	6.83	0.28	7.41
Rich	6.70	0.32	7.04
Lavish	6.70	0.28	6.50
Fancy	6.67	0.25	6.78
Extravagant	6.67	0.27	6.67
Exquisite	6.65	0.27	7.80
Indulgent	6.52	0.31	6.17
Pleasure	6.46	0.24	8.00
Gourmet	6.41	0.32	7.39
Sophisticated	6.28	0.32	7.33

Note: * 9 point scale (1: Not at all associated with Decadent, 9: Strongly associated with Decadent)

The prime words for wholesome were nutritious, healthy, hearty, nourishing, wholegrain, well-being, natural, pure, beneficial, and well-rounded. The participants rated these primes words as relatively associated with “wholesome,” with means ranging from 3.52 to 2.50 on a 9 point scale (1, strongly associated with "Wholesome," to 9, not at all associated with "Wholesome." The ten prime words were rated as positive with the means ranging from 7.00 to 8.26 on a 9-point scale (1, negative to 9, positive). Please see Table 3.6 for the detail. Repeated measures ANOVA revealed that decadent prime words were rated more decadent (M=6.589) than wholesome prime words (M=3.035) ($F_{1,45} = 168.506, p < .001, \eta^2 = .789$).

3.4.5. Procedures

A few days before the main study, subjects completed an online study about their traits, including self-control trait. Then, they engaged in a series of tasks in a computer lab. The study was administered with E-prime software, thus allowing a collection of response times. First,

subjects completed a mood manipulation task. After completing the task, subjects were asked to indicate how this task made them feel (1 = very unhappy to 9 = very happy). Second, all subjects were given a high cognitive load task. Third, subjects completed the scrambled sentence task that worked as supraliminal primes. Fourth, subjects engaged in preference tasks. Next, subjects answered either explicit attitude measures (in Study 2) or implicit attitude measures (Study 1).

Table 3.6
PRIME WORDS FOR WHOLESOME GOAL (N=46)

<i>Prime Words</i>	<i>Mean *2</i>	<i>Standard Error</i>	<i>Valence</i>
Nutritious	2.5	0.17	8.17
Healthy	2.54	0.21	8.26
Hearty	2.76	0.26	7.30
Nourishing	2.83	0.23	7.98
Wholegrain	3.17	0.23	7.00
Well-being	3.22	0.23	7.72
Natural	3.24	0.22	7.63
Pure	3.26	0.26	7.85
Beneficial	3.3	0.23	7.89
Well-rounded	3.52	0.25	7.65

Note:* 9 point scale (1: Strongly associated with Wholesome, 9: Not at all associated with Wholesome), Valence: 9 point scale (1: Negative, 9: Positive)

We used five pairs of brands (five wholesome and five decadent brands) in both attitude and preference measures. In order to minimize the order effects (attitude and preference), the preference measure also included another five pairs of brands (five wholesome and five decadent brands), not used in attitude measure (i.e., non-target brands). Then, subjects were asked to recall the eight-digit number that they were asked to remember in the beginning of the study.

3.5. ANALYSIS

3.5.1. Preliminary Checks

3.5.1.1. Reliability

The four-item, 9-point scale, was used to measure how the description of happy events made respondents feel (1, very unhappy to 9, very happy). Cronbach's Alphas were .927 for

Study 1, and .966 for Study 2. Also, thirteen items with a 9-point scale were used to measure self-control (1=less self-control to 9=more self-control). Cronbach's Alphas were .880 for Study 1 and .784 for Study 2.

3.5.1.2. Manipulation and Confound Check (Study 1)

Participants who described a happy event reported a significantly more positive mood ($M = 6.588$) than those who described an unhappy event ($M = 3.715$) ($F_{64} = 63.107, p < .001, \eta^2 = .496$). The goal prime manipulation did not have a significant effect on the mood measure ($F_{64} = 1.408, p = .240, \eta^2 = .022$).

The trait measure (i.e., self-control) was measured prior to the main study. The goal prime had no significant effect on the self-control measure ($F_{64} = 2.823, p = .098, \eta^2 = .042$). Neither did the mood manipulation have a significant effect on self-control ($F_{64} = .034, p = .855, \eta^2 = .001$). Also, sixty among sixty-eight participants correctly recognized the number (i.e., 89532316) shown in the beginning of the study.

3.5.1.3. Manipulation and Confound Check (Study 2)

Participants who described a happy event reported a significantly more positive mood ($M = 6.485$) than those who described an unhappy event ($M = 3.287$) ($F_{62} = 71.785, p < .001, \eta^2 = .537$). However, as expected, the goal prime manipulation did not have a significant effect on the mood measure ($F_{62} = .332, p = .566, \eta^2 = .005$). Similarly, the goal prime manipulation had no significant effect on the mood measure ($F_{62} = 1.233, p = .271, \eta^2 = .019$).

Again, the trait measure (i.e., self-control) was measured prior to the main study. The goal prime did not have a significant effect on self-control ($F_{62} = 1.949, p = .168, \eta^2 = .030$). Neither did the mood manipulation have a significant effect on self-control ($F_{62} = .113, p = .738, \eta^2 = .002$). Also, fifty-nine among sixty-six participants correctly recognized the number (i.e., 89532316) shown in the beginning of the study.

3.5.1.4. Outlier Analysis

In Study 1, no subjects reported a connection between the goal manipulation and the preference, or the IAT tasks. In Study 2, two of the sixty-eight subjects reported a connection between the goal manipulation and the preference or explicit attitude tasks. To avoid any possibility that the goal was consciously activated, these subjects were removed from the analysis. Thus, the analysis for Study 2 was conducted with sixty-six subjects.

3.5.2. Study 1 & Study 2 (Preference)

3.5.2.1. Hypothesis 1: Goal Prime on Preference

An analysis of variance was conducted to assess the effect of mood and goal prime on preference. Preference was a common measure in Study 1 and Study 2. There were no significant differences between Studies 1 and 2 on preference: no main effect of study ($F_{1, 125} = 2.496, p = .117, \eta^2 = .020$) and no interaction effects ($p > .05$). Thus, the data were collapsed. The dependent variable was preference for the decadent brand compared to the wholesome brand. In the analysis, prior to forming a factor score, 1 indicates a preference for frugal brands, and 9 indicates a preference for decadent brands on a 9-point scale.

These preference scores for five pairs of brands (i.e., five wholesome brands and five decadent brands) were used to compute a factor score. In the computed factor score, a negative score indicates preference for the wholesome brands; 0 indicates indifferent preference between the wholesome and the decadent brands; and a positive score indicates preference for the decadent brands. The between-subject factors were mood (positive vs. negative) and goal prime (decadent vs. wholesome). Self-control was used as covariate. Please see Table 3.7 for the ANOVA results. The main effect of goal prime on preference was significant ($M = .158$ for the decadent goal prime and $M = -.027$ for the wholesome goal prime) ($F_{1, 125} = 6.274, p = .014, \eta^2$

= .048), supporting H1. The main effect of mood on preference was not significant ($F_{1, 125} = .324$, $p = .570$, $\eta^2 = .003$). Please see Figure 3.5 for the result.

Table 3.7
ANOVA RESULTS ON PREFERENCE
(STUDIES 1 & 2) (N = 134)

	<i>df</i>	<i>F</i>	<i>p-value</i>	η^2
Trait (Self-control)	1	3.191	.076	.025
Mood	1	.324	.570	.003
Goal	1	6.274	.014	.048
Study	1	2.496	.117	.020
Mood x Goal	1	1.338	.250	.011
Mood x Study	1	.189	.664	.002
Goal x Study	1	.072	.788	.001
Mood x Goal x Study	1	.355	.552	.003

Note: All tests reported are two-tailed.

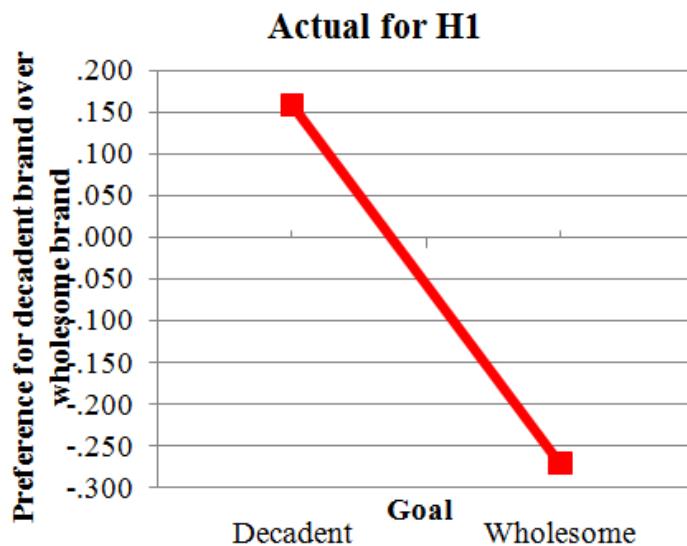


Figure 3.5
ACTUAL FOR H1 (STUDIES 1 & 2)

The two-way interaction between mood and goal prime on preference was not significant ($F_{1, 125} = 1.338$, $p = .250$, $\eta^2 = .011$). However, further analysis revealed that in a negative mood, an individual with a decadent goal prime preferred decadent brands ($M = .206$), while an individual with a wholesome goal prime preferred wholesome brands ($M = -.416$) ($F_{1, 60} = 6.999$,

$p = .010$, $\eta^2 = .104$). However, in a positive mood, the means were not statistically different ($F_{1, 64} = .720$, $p = .399$, $\eta^2 = .011$). Further analysis revealed that preference toward decadent brands over wholesome brands was indifferent to mood, either under the decadent goal prime ($F_{1, 59} = .130$, $p = .720$, $\eta^2 = .002$) or under the wholesome goal prime ($F_{1, 65} = 1.711$, $p = .195$, $\eta^2 = .026$). Please see Figure 3.6 for the result.

3.5.2.2. Hypothesis 2: Goal and Brand Order on Preference

Repeated measures ANOVA was conducted to assess the effect of brand order, mood, and goal prime on preference. In the order analysis, we needed to analyze all the brands from the first preference task to the tenth preference task. Thus, all ten pairs of wholesome and decadent brands were used for the analysis, whereas only five pairs of wholesome and decadent brands, common either in explicit or implicit attitude measures, were used in the other analysis (e.g., testing H1). In the analysis, 1 indicates a preference for frugal brands, while 9 indicates a preference for decadent brands, using a 9-point scale. A factor score was not computed in this order analysis.

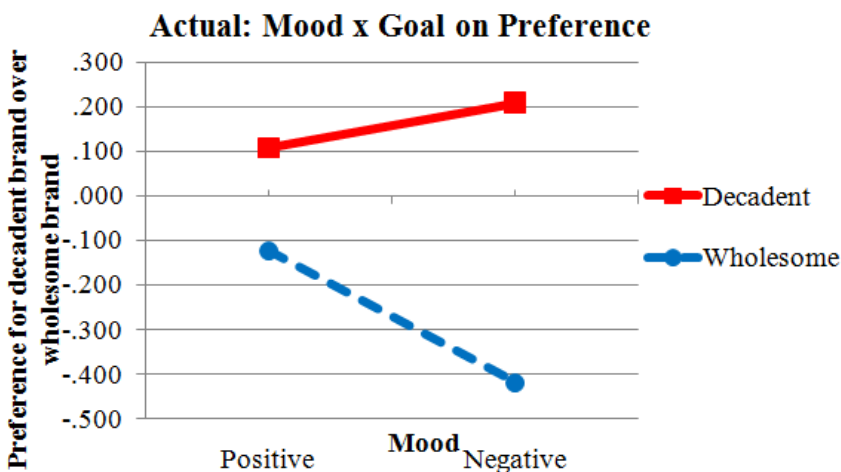


Figure 3.6
MOOD X GOAL ON PREFERENCE (STUDY 1 & 2)

The following interactions, as the primary interests of this analysis, were not significant; that is, between brand order and study (Study 1 vs. Study 2) ($F_{1,125} = .669, p = .415, \eta^2 = .005$), between goal prime and study ($F_{1,125} = .024, p = .877, \eta^2 = .000$), and among goal prime, study, and brand order ($F_{1,125} = .836, p = .362, \eta^2 = .007$). Thus, although the main effect of study on preference was significant ($F_{1,125} = 6.598, p = .011, \eta^2 = .050$), the data for Study 1 and Study 2 were collapsed in this analysis.

As expected, an individual with a decadent goal prime ($M=5.813$) preferred toward decadent brands to wholesome brands more than an individual with a wholesome goal prime ($M=5.268$) ($F_{1,125} = 5.890, p = .017, \eta^2 = .045$). However, the two way interaction of brand order and goal prime on preference was not significant ($F_{1,125} = .669, p = .415, \eta^2 = .005$). This may be an indication that the prime words are activating a goal rather than prime-related associative cues, supporting H2a and rejecting H2b. As the interaction between goal prime and mood on preference ($F_{1,125} = .701, p = .404, \eta^2 = .006$), and the interaction between brand order, goal prime, and mood on preference ($F_{1,125} = .533, p = .467, \eta^2 = .004$) were not significant, the main effect of goal and the interaction of goal and brand order on preference should be unaffected by mood. Please see Figure 3.7 and Table 3.8 for the result.

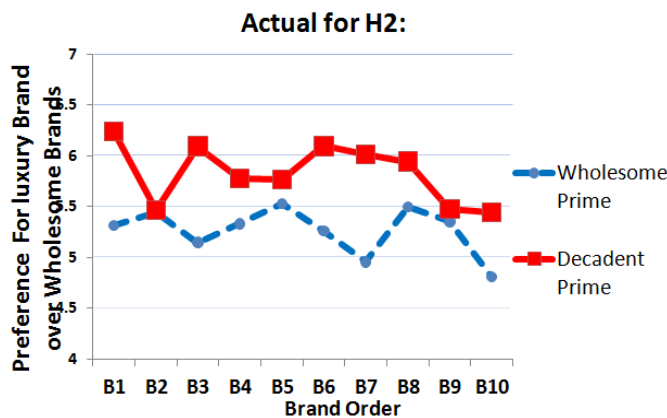


Figure 3.7
ACTUAL FOR H2

3.5.3. Study 1

3.5.3.1. Hypotheses 3a, 4a, 5a, 6a, and 7

Path analysis, a form of general linear model (Karlin, Cameron, Chakraborty, 1983), was conducted to simultaneously assess the effect of mood, category combination, and goal on implicit attitude and preference (Please see Figure 3.8). Please see Graham 2008 for the use of categorical data in the general linear model. The analysis revealed that goal prime (1 = wholesome and 2 = decadent) positively and significantly affected implicit attitude toward decadent brands over wholesome brands ($\beta = .231, p=.028$), supporting H4a. The direct effect of goal prime on preference was not statistically significant ($\beta = .174, p = .134$), supporting H3a. As expected, implicit attitude positively affected preference ($\beta = .279, p=.016$), supporting H5a.

Table 3.8
Repeated Measures of ANOVA Results on Preference for Brand Order Analysis
(Study 1 & 2) (N = 134)

	<i>df</i>	<i>F</i>	<i>p-value</i>	η^2
Brand Order	1	.932	.336	.007
Brand Order x Trait (Self-control)	1	1.028	.313	.008
Brand Order x Mood	1	1.023	.314	.008
Brand Order x Goal	1	.669	.415	.005
Brand Order x Study	1	.791	.376	.006
Brand Order x Mood x Goal	1	.533	.467	.004
Brand Order x Mood x Study	1	.763	.384	.006
Brand Order x Goal x Study	1	.836	.362	.007
Brand Order x Mood x Goal x Study	1	.866	.354	.007
Trait (Self-control)	1	4.979	.027	.038
Mood	1	.051	.821	.000
Goal	1	5.890	.017	.045
Study	1	6.598	.011	.050
Mood x Goal	1	.701	.404	.006
Mood x Study	1	1.587	.210	.013
Goal x Study	1	.024	.877	.000
Mood x Goal x Study	1	.103	.749	.001

Note: All tests reported are two-tailed.

Further path analysis revealed that mood was not a good predictor of either implicit attitude ($\beta = .057, p=.586$) or preference ($\beta = -.129, p=.256$), rejecting H6a and H7. (Please see Figure 3.8 for the result.)

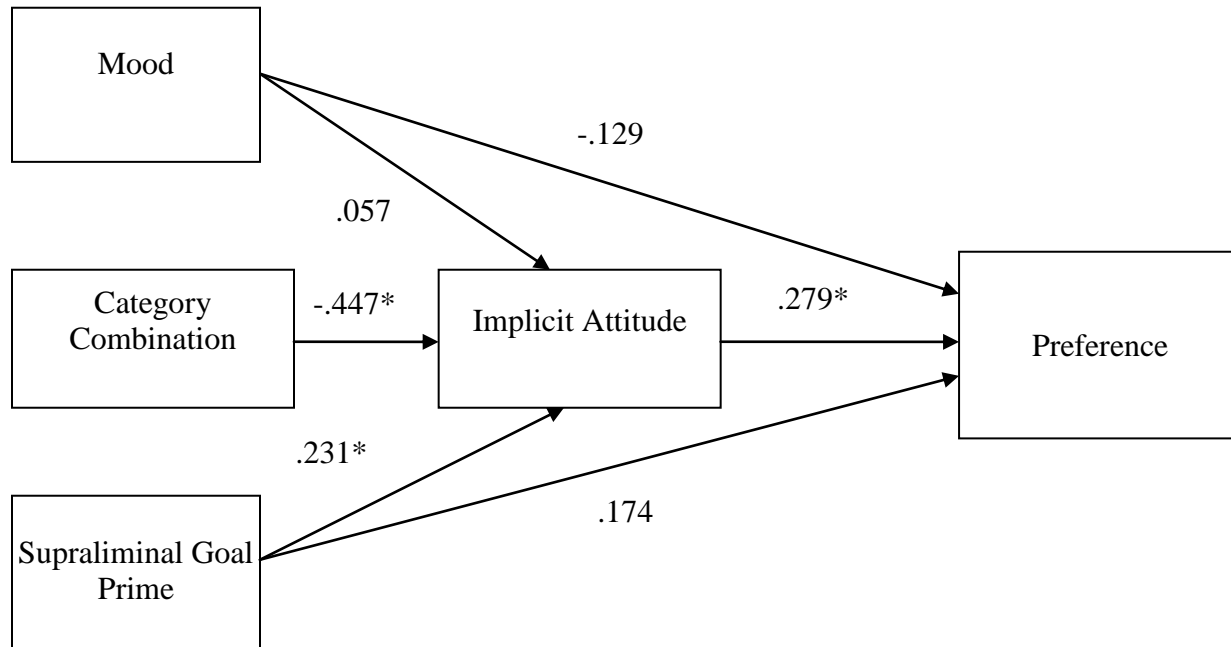


Figure 3.8
PATH MODEL (ACTUAL FOR STUDY 1)

3.5.3.2. Hypothesis 8

Path analysis revealed that a category combination (1=combination 1; 2=combination 2) is negatively associated with implicit attitude ($\beta = -.447, p<.001$), supporting H8. This is an indication that combination 1 resulted in a better implicit attitude toward decadent brands than for combination 2. A multivariate analysis of variance was conducted to confirm the effect of a category combination on implicit attitude (Please see Table 16 for the results).

A category combination affects implicit attitude, where consumers had more positive attitudes toward wholesome brands in combination 1 ($M = .072$) and more positive attitudes toward decadent brands in combination 2 ($M = -.547$) ($F_{1, 59} = 15.942, p <.001, \eta^2 = .213$), confirming H8. Please see Figure 3.8 and Table 3.9. Since a category combination had no

significant interactions with the goal ($F_{1,59} = .312, p = .579, \eta^2 = .005$), or mood ($F_{1,59} = 2.191, p = .144, \eta^2 = .036$), the effect of category combination on implicit attitude was consistent regardless of mood or goal. Please see Table 3.9.

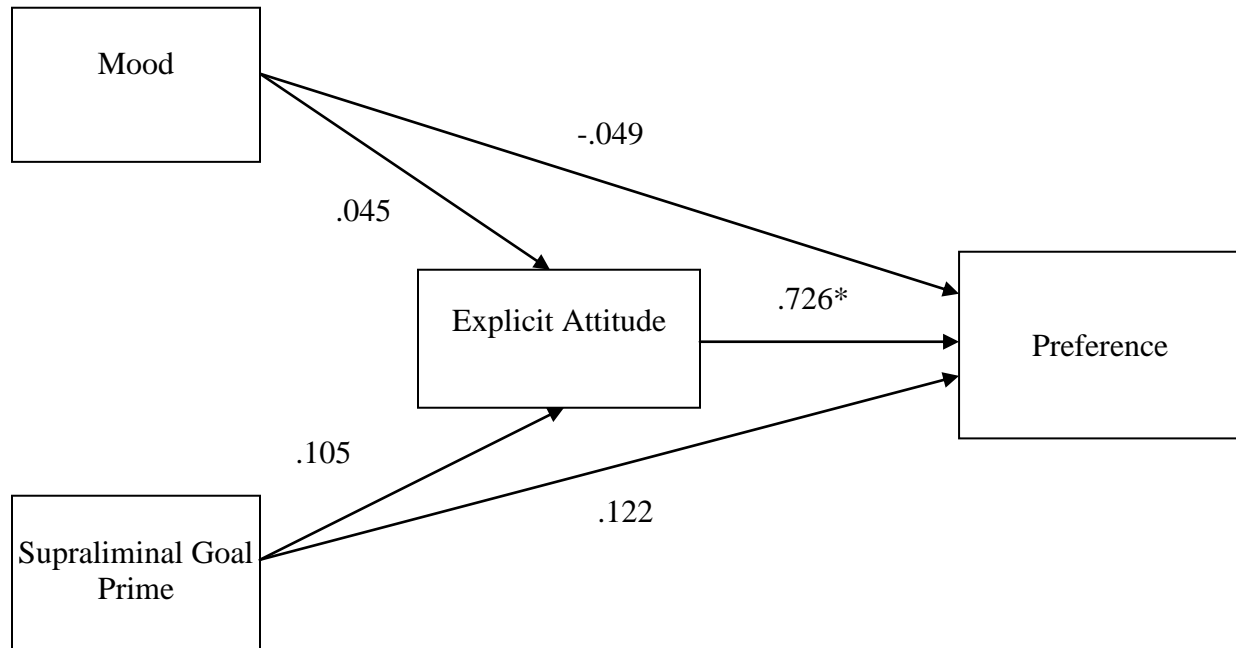


Figure 3.9
PATH MODEL (ACTUAL FOR STUDY 2)

3.5.4. Study 2

3.5.4.1. Hypotheses 3b, 4b, 5b, 6b, 7

Path analysis was conducted to simultaneously assess the effect of mood and goal on explicit attitude and preference. The analysis revealed that the goal prime had no significant effect on explicit attitude ($\beta = .105, p = .395$), supporting H4b. Goal prime had no significant effect on preference ($\beta = .122, p = .139$), rejecting H3b. Explicit attitude was a good predictor of preference ($\beta = .726, p < .001$), supporting H5b. Although we have predicted that implicit attitude has a stronger relationship with preference than explicit attitude, this was not supported. Comparison of standardized regression weights reveals that explicit attitude has a stronger relationship ($\beta = .726, p < .001$) with preference than implicit attitude ($\beta = .279, p < .001$),

rejecting H5c. Mood was not a good predictor of either explicit attitude ($\beta = .045$, $p = .712$) or preference ($\beta = -.049$, $p = .549$), rejecting both H6b and H7. Please see Figure 3.9 and Table 3.10 for the result.

Table 3.9
MANOVA RESULTS FOR STUDY 1

	<i>df</i>	<i>F</i>	<i>p-value</i>	η^2
<i>Preference (Dependent Variable)</i>				
Trait(Self-control)	1	1.224	.273	.020
Mood	1	.831	.366	.014
Goal	1	2.884	.095	.047
Category Combination	1	.103	.749	.002
Mood x Goal	1	2.406	.126	.039
Mood x Category Combination	1	2.206	.143	.036
Goal x Category Combination	1	1.575	.214	.026
Mood x Goal x Category Combination	1	.227	.635	.004
<i>Implicit Attitude (Dependent Variable)</i>				
Trait(Self-control)	1	.003	.957	.000
Mood	1	.237	.628	.004
Goal	1	4.511	.038	.071
Category Combination	1	15.942	.000	.213
Mood x Goal	1	.129	.720	.002
Mood x Category Combination	1	2.191	.144	.036
Goal x Category Combination	1	.312	.579	.005
Mood x Goal x Category Combination	1	.156	.695	.003

Note: All tests reported are two-tailed.

3.6 Discussion

3.6.1. Hypothesis 1

As we have predicted, consumers preferred brands consistent with the goal prime. Although the interaction of mood and goal prime on preference was not significant, there was a slight goal-approach tendency in a negative mood, implied by the significant main effect of the goal prime ($F_{1, 125} = 6.999$, $p = .010$, $\eta^2 = .104$) in a negative mood ($M = .206$ for decadent prime; $M = -.416$ for wholesome prime), but not in a positive mood, ($F_{1, 125} = .720$, $p = .399$, $\eta^2 = .011$). This approach tendency of negative mood is consistent with the notion that negative emotion (e.g., anger) facilitates goal-approach tendencies, rather than goal-avoidance tendencies (e.g.,

Aarts, Custers, and Holland, 2007, p. 176, Carver, 2004). Please see Table 3.10 for the MANOVA results.

These findings conflict with some studies (e.g., Fishbach and Labroo, 2007) that suggest an individual in a positive mood tends to approach the goal while an individual in a negative mood tends to avoid the goal. Thus, under high cognitive load, where opportunity is low, an individual in a positive mood should approach the goal, resulting in goal-consistent behavior. In contrast, an individual in a negative mood should avoid the goal, and thus brand preference is not affected by the goal prime. Results from Essay 2 support this argument (Please see 3.6.9. General Discussion for explanation of these seemingly conflicting results).

Table 3.10
MANOVA RESULTS FOR STUDY 2

	<i>df</i>	<i>F</i>	<i>p-value</i>	<i>η</i> ²
<i>Preference (Dependent Variable)</i>				
Trait(Self-control)	1	1.860	.178	.030
Mood	1	.005	.944	.000
Goal	1	3.312	.074	.051
Mood x Goal	1	.191	.664	.003
<i>Explicit Attitude (Dependent Variable)</i>				
Trait(Self-control)	1	.958	.332	.015
Mood	1	.166	.685	.003
Goal	1	.989	.324	.016
Mood x Goal	1	.187	.667	.003

Note: All tests reported are two-tailed.

3.6.2. Hypothesis 2

The effect of the goal prime on preference was indifferent to brand order. If the goal prime was merely triggering semantic activation, the effect of the goal prime should diminish after exposure to a prime (Higgins, 1996). Thus, the results suggest that the prime was activating a goal. This is because an activated goal (e.g., hunger) is believed to maintain its effect until it is fulfilled (e.g., by eating lunch) (Aarts, Gollwitzer, and Hassin, 2004). In order to clearly

understand this possible diminishing effect of semantic activation, some researchers include filler tasks after the goal manipulation, yet before subjects engage in the behavioral task (e.g., choice task or preference task).

3.6.3. Hypotheses 3a, 4a, and 5a

The path analysis supported H3a, H4a and H5a. This indicates that goal consistent preference was mediated by implicit attitude. To the best of our knowledge, this is the first study that empirically found that the goal consistent preference is mediated by implicit attitude, using the IAT in a consumer consumption context. Some researchers may argue that the goal prime was merely activating semantic cues, resulting in mediation by implicit attitude and prime-consistent preference. However, the empirical support for H2a (goal activation) instead of H2b (semantic activation) rejects this explanation.

The mediating role of implicit attitude on prime-consistent preference is well explained by the goal system theory. As the goal system theory indicates, semantic activation and goal activation may not differ from each other. If goals, subordinate-goals, and their means are represented similarly to semantic cues in memory, a goal prime may activate a goal and associated cues, resulting in prime-consistent implicit attitude and prime-consistent preference. Thus, there is no direct effect of goal prime on preference, thus supporting H3a.

If semantic construct activation is “passive with no motivational properties” (Bargh et al. 2001, Dijksterhuis and Bargh 2001, c.f., Sela and Shiv, 2009), where cognitive systems and motivational systems are considered two distinct systems, successful goal activation should not be mediated by implicit attitude. In such a case, goal activation by the goal prime should directly lead to a prime-consistent preference with no effect on either implicit or explicit attitudes. Supporting H3a with no direct effect of the goal prime on implicit attitude rejects the view that motivation and cognitive systems are two different systems.

3.6.4. Hypotheses 6a and 7

Neither H6a nor H7 was supported. We predicted that an individual in a negative mood lacks self-control, resulting in preference toward immediate rewards (e.g., try to feel better by eating tasty, but unhealthy, decadent food) rather than long-term rewards (e.g., staying fit and healthy). However, the main effect of mood on implicit attitude and preference was not observed in our study.

It may be the case that the goal of maintaining or improving mood was not accessible; thus, an individual in a negative mood would not feel better by prioritizing immediate rewards over long-term rewards. Instead, subjects approached a given goal prime, resulting in goal consistent attitude or goal consistent preference, regardless of mood. This finding is somewhat consistent with Fishbach and Labroo (2007).

3.6.5. Hypothesis 8

As noted, the means for implicit attitude in IAT combination 1 and in IAT combination 2 were .072 and -.542, respectively. For combination 1, decadent and positive (categories on the left), wholesome and negative (categories on the right) combination was administered first in Steps 3 & 4, and switched later in Steps 6 & 7. In combination 2, wholesome and positive (categories on the left), decadent and negative (categories on the right) combination administered first in Steps 3 & 4, and switched later in Steps 6 & 7. This support of H8 indicates that IAT combination 1 resulted in a better implicit attitude toward decadent brands over wholesome brands than IAT combination 2.

These findings are consistent with Messner and Vosgerau's (2010) argument that it requires effort for an individual to learn a new category combination in Steps 6 & 7, one different from a previously learned category combination in Steps 3 & 4. Thus in the IAT, response times for Steps 6 & 7 should be consistently longer than for Steps 3 & 4. Consistent

with Messner and Vosgerau (2010), subjects preferred decadent brands in combination 1, and wholesome brands in combination 2.

While the mean of implicit attitude for combination 1 was positive (i.e., .072), the mean of implicit attitude for combination 2 was negative (i.e., -.542). While the positive number suggests a more favorable implicit attitude toward the decadent brand over the wholesome brand, the negative number suggests a more favorable attitude toward wholesome brands over a decadent brand. Thus, it is important to counterbalance the combination of categories in the IAT.

3.6.6. Hypotheses 3b, 4b, and 5b

In path analysis, the direct effect of the supraliminal goal prime on preference was not significant, rejecting H3b. However, the MANOVA revealed that a goal prime had a significant goal consistent effect on preference ($P=.037^1$). This suggests that the combination of the direct effect, and the indirect effect through implicit attitude, of goal prime on preference was significant. As expected, the goal prime did not have a significant effect on explicit attitude, thus supporting H4b. Also, as expected, an explicit attitude had a positive and significant effect on preference, thus supporting H5b. Therefore, the effect of goal prime on preference was not mediated by an explicit attitude.

Although we predicted that under high-cognitive load, an implicit attitude would be a better predictor than explicit attitude, this was not the case. Both explicit and implicit attitudes were good predictors of preference. Yet unexpectedly, explicit attitude had a stronger relationship with preference than implicit attitude. These results, in conjunction with those for H3a, H4a, and H5a, imply that a non-conscious goal prime may be mediated by implicit attitude, but not by explicit attitude. This result is consistent with Ferguson and Bargh (2004)'s argument

¹ *1: As we have predicted the direction of the effect of goal prime on preference, the p-value is computed as one-tailed.

that although an activation of goal would affect implicit attitude uniquely, that activation does not affect explicit attitude.

3.6.7. Hypotheses 6b, 7

Similar to Study 1, mood was not a good predictor of either explicit attitude or preference, rejecting both H6b and H7. Again, this might be an indication that when a goal already exists (i.e., wholesome or decadent goals), an individual in a negative mood may not have an accessible goal toward improving the mood by favoring immediate rewards (e.g., eating tasty, decadent food) to long-term rewards (e.g., staying fit and healthy). Thus, the main effect of mood on preference or explicit attitude is due to a lack of self-control in a negative mood.

3.6.8. Implication (Studies 1 & 2)

The results from Studies 1 and 2 indicate that the goal activation explanation was supported, rejecting the semantic-cue activation explanation. Also, interestingly, implicit attitude was a better mediator of the relationship between goal prime and preference than explicit attitude. These findings have important theoretical implications.

The consistent goal priming effect on preference did not diminish over time, which means that the prime activated the goal, not just semantic cues, resulting in a preference consistent with goal prime. This is because the effect of semantic cue activation may decay quickly over time, whereas the effect of goal activation should not diminish until fulfilled.

Interestingly, the goal prime had a significant effect not only on preference, but also on implicit attitude. Then the implicit attitude had a positive, significant effect on preference. Thus, the effect of goal prime on preference was mediated by the implicit attitude. This is consistent with the theory of goal systems where goals and motivation are part of the cognitive systems rather than distinct from them. If the goal is not part of the cognitive systems, as other

researchers argue, the effect of goal prime on preference would not have been mediated by implicit attitude.

However, there was no effect of the goal prime on explicit attitude. As some studies indicate that goal activation has more impact on implicit attitude than on explicit attitude (Ferguson, 2008; Ferguson and Bargh, 2004), a consideration of explicit attitude alone may lead researchers to underestimate the effects of goal primes. The results of this study highlight the importance of including implicit attitude measures, such as the IAT, to capture the effect of goal prime on behavioral outcomes, such as brand preference.

The study also has an important methodological implication on the use of the IAT. Support for H8 indicates that the category combination has a significant effect on implicit attitude. This result is important when the direction of preference depends on the category combination; in this study, one category combination resulted in preference towards decadent brands, while the other category combination resulted in a preference for wholesome brands ($M=.072$ for combination 1 and $M = -.547$ for combination 2). If a researcher applies only one category combination, the results might be misinterpreted, which confirms the argument by Messner and Vosgerau (2010).

3.6.9. General Discussion (Essay 2 & Essay 3)

3.6.9.1. Introduction

This dissertation has two primary purposes: (1) to understand how goal primes affect preference, and (2) to understand the moderators and mediators of the effect of goal prime on preference. As Custers and Arts (2007) pointed out, we do not have a clear understanding of how goal primes affect behavioral outcomes. Chartland et al. (2008) and Sela and Shiv (2009) provided the latest attempt in marketing literature to understand such mechanisms. Closely following the goal manipulation method used in Chartland et al. (2008), we measured the direct

effects of goal prime on implicit attitude (IAT) and explicit attitude. As far as we know, this dissertation is the first attempt to measure implicit attitude (IAT) and explicit attitude as mediators of the relationship between goal prime and preference in a brand preference context.

Also, research suggests that the goal prime facilitates a choice that is either consistent or inconsistent with goal prime (Laran, Janiszewski, and Cunha Jr., 2008). This dissertation confirms the latter finding by (1) identifying moderators of this relationship (i.e., mood and cognitive load) in the context of frugal vs. luxury brand preference; and (2) identifying context differences as other moderating factors (i.e., the context of luxury brand vs. frugal brand preference, vs. the context of wholesome vs. decadent brand preference).

3.6.9.2. The Effect of Goal Prime on Preference

Consumers have not always preferred brands consistent with the goal prime in the context of luxury vs. frugal brands (i.e., Essay 2). In Essay 2, the effect of goal prime on preference was moderated by mood and cognitive load. Also, in Essay 2, the effect of goal prime on preference was more pronounced under a high cognitive load and a positive mood.

This finding is consistent with the MODE model, which suggests that one's behavior is guided more by relatively automatic process under low opportunity (e.g., high cognitive load) than under high opportunity (e.g., low cognitive load) (Fazio, 1990). Thus, the effect of a non-conscious goal prime on preference is more pronounced under a high cognitive load. Also, the interaction between mood and goal is explained by the goal approach tendency in a positive mood and the goal-avoidance tendency in a negative mood (Fishbach and Labroo, 2007).

In Essay 3, however, consumers preferred brands consistent with the goal prime, regardless of mood, in the context of consuming wholesome vs. decadent brands. Although the interaction of mood and goal was not statistically significant, the effect of goal prime on preference was relatively more pronounced in a negative mood.

There are two potential explanations for the inconsistency between Essay 2 and Essay 3. One possibility is the difference in the context. Laran, Janiszewski, and Cunha Jr. (2008) noted that the possibility of more prime-inconsistent behavior in uncommon behavioral contexts, rather than in common behavioral contexts. For student subjects, the context of consuming luxury vs. frugal brands in Essay 2 was more uncommon than that of consuming decadent vs. wholesome brands in Essay 3. For example, the purchase of luxury brands (e.g., BMW) may have been an uncommon behavioral context. Instead, the product categories used in Essay 3 were in more common behavioral contexts. Thus, the possibility of activating information inconsistent with the goal prime is more pronounced in Essay 2 than in Essay 3, leaving more room to be moderated by mood.

Another explanation is the role of mood in goal-approach and goal-avoidance tendencies. “Certain negative emotions may encourage rather than discourage goal pursuit” (see Aarts, Custers, and Holland, 2007, p. 176). Although the interaction of mood and goal was not statistically significant, as seen in Figure 6, the effect of the goal prime on preference was slightly more pronounced in a negative mood than in positive mood. The finding that negative mood, instead of positive mood, encouraged goal pursuit in Essay 3, is consistent with the notion that negative mood has more complex effects than positive mood (Isen, 1984; Leith and Baumeister, 1996).

3.6.9.3. The Mediating Role of Explicit Attitude and Implicit Attitude

Both in Essay 2 and Essay 3, goal primes affected implicit attitude, but did not affect explicit attitude. In Essay 2, whereas the effect of goal prime on implicit attitude was moderated by mood and cognitive load, the effect of goal prime on explicit attitude had no effect on explicit attitude. In Essay 3 under a high load, the effect of goal prime on preference, as expected, was mediated by implicit attitude, but not by explicit attitude.

3.6.9.4. Goal Activation vs. Semantic Cue Activation

In both Essay 2 and Essay 3, the data suggests that primes activate goals, rather than semantic cues. The goal activation explanation was supported by the maintained, and undiminished, goal prime effect on preference overtime. Consistent with the theory of goal systems, these results suggest that goal activation accompanies activation of goal-related cue activation. According to Kruglanski et al. (2002), “the cognitive properties of goal-systems set the constraints within which the motivational properties may express themselves.” Thus, Kruglanski et al. (2002) explains goal-systems as characterized by both cognitive and motivational properties. After all, goal activation and semantic cue activation may not conflict with each other. Goal activation may be initiated by semantic cue activation of goal related concepts (These concepts probably have no motivational property). As a result, semantic activation may lead to activation of the means needed to attain the goal.

Research suggests that the effect of goals is better captured by implicit attitude rather than explicit attitude. If researchers investigate the impact of goal activation only on explicit attitude, researchers may be unable to fully capture the impact of goals on attitudes. The distinction between explicit and implicit attitude may be why some researchers consider motivational properties and cognitive properties to be two separate systems.

From a managerial perspective, brands should be recognized as means to achieve goals. For instance, if an ad can activate a brand that is seen as instrumental to the goal, the brand activation may lead to goal activation. In that case, the goal may not diminish until the individual purchases the brand.

3.6.9.5. The Role of Mood on Implicit/Explicit Attitude and Preference

We have predicted that individuals in a negative mood (vs. a positive mood) lack self-control, thus preferring either luxury brands (vs. frugal brands) or decadent brands (vs.

wholesome brands). Although this should result in the main effect of mood on preference, the main effect of mood on preference was not observed in these data. In Essay 2, mood was a moderator of the goal prime effect on preference. Under a high cognitive load, a positive mood facilitated goal-approach tendencies and a negative mood facilitated goal-avoidance tendencies. In Essay 3, preference was not affected by mood nor by the interaction between mood and the goal prime. However, the goal prime did have a main effect on preference. Thus, in Essay 2, the interaction between the goal prime and mood affected preference. In Essay 3 only the goal prime, not mood, had an effect on preference.

Both in Essay 2 and Essay 3, the main effect of mood on preference, due to lack of self-control, was not observed. As noted, an individual in a negative mood prioritizes immediate rewards (e.g., buying luxury brands to make himself/herself feel better) rather than long-term benefits (e.g., saving money by buying frugal brands), more so than an individual in a positive mood (Tice, Bratslavsky, and Baumeister, 2001). The current goal may be overridden by a new prime. This may illustrate a potentially powerful effect of goal primes on preference or other behavioral outcomes.

3.6.9.6. Implication for the MODE Model

The assumption of the MODE model that priming activates only strongly held attitudes has been questioned by researchers, who argue that all attitudes are activated automatically (Ajzen and Fishbein, 1980). Our findings in Essay 2 and Essay 3 are consistent with this notion that the prime can activate both strong and weak attitudes automatically. In Essay 2, the effects of goal prime on both preference and implicit attitude were not moderated by materialism. However, they were moderated by cognitive load and mood. Whereas individuals with high materialism may have strongly held attitudes towards luxury vs. frugal brands, those with low materialism may have weakly held attitudes toward those brands. Thus, the goal prime

automatically activates an implicit attitude, regardless of materialism or the strength of implicit attitudes.

In Essay 3, we used self-control (trait) only as a covariate. Therefore, we did not directly test whether the effect of goal prime on either preference or implicit attitude was moderated by trait or attitude strength. However, the goal prime had main effects on both preference and implicit attitudes. Our findings from both Essay 2 and Essay 3 potentially indicate that the goal prime can automatically activate both strong and weak attitudes.

3.6.10. Limitations and Future Research (Essay 2 & Essay 3)

3.6.10.1. Issues with IAT

Although the IAT is the most popular measure of implicit attitude today, some researchers raise issues with the IAT (e.g., Messner and Vosgerau, 2010; Jaccard and Blanton, 2007). Consistent with the findings of Messner and Vosgerau (2010), we discussed the effect of category combinations on IAT scores. Jaccard and Blanton (2007) questioned the assumptions underlying the IAT. One such assumption is that the IAT requires a comparison of attitudes towards two objects (i.e., relative attitudes), with bipolar relationships. However, this may not be true. In our study, we used wholesome vs. decadent, and frugal vs. luxury. We do not know if these two categories are conceptually bipolar. Researchers may be able to pretest the cognitive structure of potential categories by constructing a cognitive mapping. Another solution may be the use of a single category IAT (Steinman and Karpinski, 2008).

Furthermore, the IAT is a relatively complicated task. Typically, the IAT has seven steps with ten to twenty brand names or words to categorize for each step; thus, there are about 120 words to categorize in total. For some participants, this might present a tiring task that may induce a negative mood or increase cognitive load. Some researchers have developed a single category IAT (e.g., Steinman and Karpinski, 2008), which may be less susceptible to these

effects. Nevertheless, both formats should be empirically tested for validity and reliability (e.g., potential confounds with mood and cognitive load).

3.6.10.2. Mood Manipulation

As is always the challenge for mood research, mood is transient in nature. Thus, a mood induced at the beginning of a study may regress toward the mean toward the end of the study. In order to overcome this challenge, researchers may need to use multiple mood manipulations throughout the study, or measure mood constantly throughout the study by using some physiological measures (e.g., heart rate, skin temperature). Thus, it might be possible to account for the transient effects of mood on attitude and preference.

Furthermore, in the mood manipulation, participants were asked to recall happy or unhappy events. Some happy events may induce more (or less) mood arousal than others. Although we have only measured the valence of mood, the arousal of mood may present another crucial dimension. Some research suggests that a positive mood with high arousal reduces self-regulation (Fedorikhin and Patrick, 2008). Thus, it may be interesting to investigate the effect of both valence and arousal of mood on brand preference in the context of non-conscious goal activation.

3.6.10.3. Stimulus (Brands)

We have used brands in multiple product categories in measuring preference and implicit/explicit attitude. This was partly because of a limited number of brands available in a single product category, containing both wholesome and decadent brands, or luxury and frugal brands. The IAT typically requires five or more brands in each category (wholesome and decadent, or luxury and frugal). It may be possible to use not only verbal information (i.e., brand name) but also visual information (i.e., pictures of brands) to minimize the number of brands

required. Further, combining both the verbal and visual stimulus in the IAT might increase the generalizability of the findings.

3.6.10.4. Order Effects

Throughout the studies, we observed many types of order effects. First, the order of administering dependent measures (i.e., explicit attitude, implicit attitude, and preference) had some effects. This may be due to the transient nature of mood. Alternatively, some of the dependent measures themselves may have affected other measures. For instance, the IAT has many brands (e.g., frugal vs. luxury brands) within its measures. These brands might have triggered goals and affected either explicit attitude or preference. However, in view of an equal number of frugal and luxury brands, this consideration should not work as a serious confound in the study.

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APPENDIX I
DETAILED PRETEST RESULTS: LUXURY BRAND NAMES

<i>Brand Name</i>	<i>Luxury or Frugal*</i>	<i>Familiarity</i>	<i>Employed in Main Study?</i>
Saks Fifth Avenue	1.61	6.39	Yes
Nordstrom	2.92	5.90	Yes
Four Seasons	2.89	6.15	Yes
Ritz-Carlton	1.27	6.68	Yes
BMW	1.55	7.87	Yes
Hyatt	3.69	6.15	Yes
Armani	1.50	6.35	Yes
Lexus	1.71	7.31	No
Continental	4.81	6.24	No
Hertz	5.40	6.06	No
Avis	5.39	4.94	No
Apple	2.65	7.55	No
Bose	2.61	6.79	No
Gucci	1.40	6.63	No
Harvard	1.56	6.56	No
Yale	1.56	6.45	No
Delta	4.60	6.68	No

* 9 point scale with 1 (luxury) and 9 (frugal)

APPENDIX II
DETAILED PRETEST RESULTS: FRUGAL BRAND NAMES

<i>Brand Name</i>	<i>Luxury or Frugal</i>	<i>Familiarity</i>	<i>Employed in Main Study?</i>
Wal-Mart	7.68	8.61	Yes
Dollar General	8.52	7.66	Yes
Kia	7.11	5.97	Yes
Motel 6	8.50	6.66	Yes
Best Western	6.98	7.03	Yes
Days Inn	7.52	6.73	Yes
Hanes	6.39	7.60	Yes
Southwest	6.16	6.68	No
Budget	6.71	5.32	No
Thrifty	7.21	5.76	No
Hyundai	6.27	5.24	No
Dell	4.55	7.71	No
Panasonic	4.56	6.29	No
Converse	6.11	6.23	No
University of Phoenix	7.11	5.32	No
Baton Rouge	7.53	6.15	No
Community College			
Air Tran	5.76	4.21	No

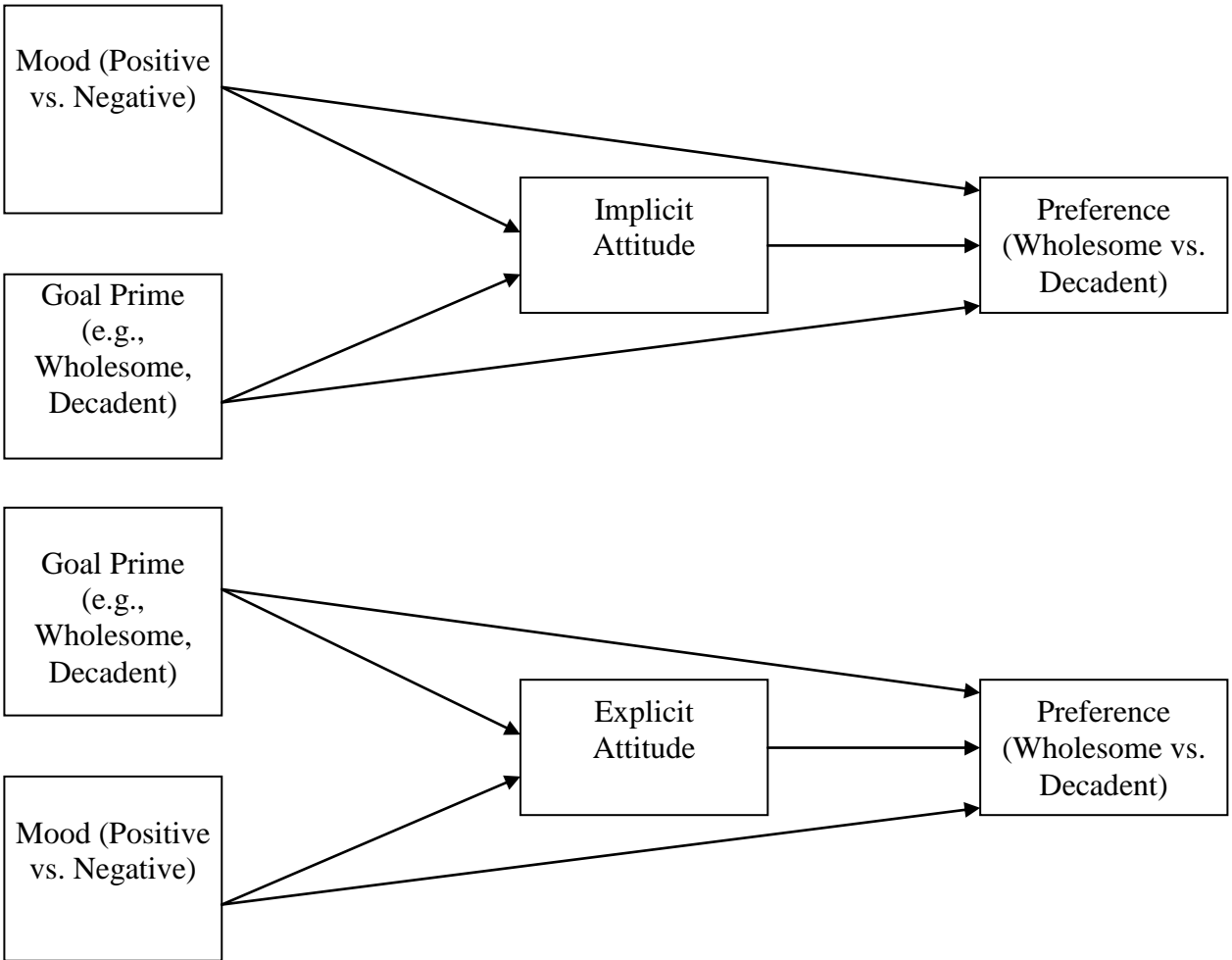
* 9 point scale with 1 (luxury) and 9 (frugal)

APPENDIX III
SCALE ITEMS: MATERIALISM (GENERAL)

1. It is important to me to have really nice things.
2. I would like to be rich enough to buy anything I want.
3. I'd better be happier if I could afford to buy more things.
4. It sometimes bothers me quite a bit that I can't afford to buy all of the things I would like.
5. People place too much emphasis on material things.
6. It's really true that money can buy happiness.

(Note: 1. Item 5 has been deleted to improve the reliability, 2. Scale from Richins and Dawson (1992).)

APPENDIX IV
PROPOSED CONCEPTUAL MODEL FOR ESSAY 3



Manipulated Variables: Goal Prime, Mood,

Measured variables: Explicit Attitude, Implicit Attitude, Preference

APPENDIX V
DETAILED PRETEST RESULTS: DECADENT BRAND NAMES

	<i>Decadent</i>	<i>Wholesome</i>	<i>Familiarity</i>	<i>Positive</i>	<i>Employed in Main Study?</i>
Ben & Jerry's	6.47	5.97	7.24	7.03	Yes
Haagen-Dazs	6.26	5.59	5.76	6.06	Yes
Godiva	6.06	5.24	5.71	6.24	Yes
Snickers	6.03	5.94	8.35	7.32	Yes
Pepperidge Farm Cookie	5.59	5.88	6.50	6.65	Yes
Wolfgang Puck	5.12	5.06	5.09	5.26	Yes
Starbucks	6.47	6.15	8.24	6.85	Yes
Coke	6.21	6.24	8.71	7.91	Yes
Krispy Kreme	5.53	4.62	7.44	6.00	Yes
Wonka	5.32	5.15	6.76	6.26	Yes
Dove-Chocolate	6.24	5.97	7.26	6.82	No
Twix	6.06	5.65	7.82	7.41	No
Ghirardelli	5.97	5.21	5.53	6.21	No
A1Steaksauce	5.82	6.53	7.94	6.71	No
Oreo	5.71	5.85	8.09	7.26	No
Pepsi	5.71	5.94	8.47	7.32	No
Swissmiss	5.65	5.94	6.15	6.24	No
Kit Kat	5.50	5.59	8.06	7.09	No
Chips Ahoy	5.47	5.97	8.03	7.35	No
Doritos	5.44	6.18	8.24	7.65	No
Starburst	5.41	5.44	7.82	7.00	No
Frito-Lay	5.38	5.76	7.91	7.38	No
DiGiorno	5.12	5.85	6.59	6.44	No
Heineken	5.06	5.00	7.06	5.26	No
Sprite	5.06	5.85	8.26	7.12	No
Kendall-Jackson	4.91	4.82	2.91	4.88	No
Pringles	4.91	5.62	7.59	7.06	No
Coffee-Mate	4.88	5.32	6.74	6.18	No
McDonald's	4.82	4.65	8.47	6.88	No
California Pizza Kitchen	4.79	5.53	4.32	5.59	No
Café Du Monde	4.76	4.82	2.74	5.00	No
Texas De Brazil	4.62	4.65	2.97	4.71	No
Seattle's Best	4.56	4.94	3.74	5.18	No
Nescafe	4.56	5.35	4.79	5.09	No
Taster's Choice	4.41	5.06	3.88	4.85	No

APPENDIX VI
DETAILED PRETEST RESULTS: WHOLESOME BRAND NAMES

	<i>Wholesome</i>	<i>Decadent</i>	<i>Familiarity</i>	<i>Positive</i>	<i>Employed in Main Study?</i>
Dannon	6.89	5.36	7.18	7.00	Yes
Yoplait	6.71	5.36	6.86	7.00	Yes
Cheerios	7.71	5.25	7.96	7.64	Yes
Quaker Oats	7.29	4.89	7.50	7.32	Yes
Fiber One	6.68	5.18	5.96	5.61	Yes
Healthy choice	6.89	5.36	6.54	6.36	Yes
V8	7.64	5.79	7.64	7.04	Yes
Dole	6.93	5.57	7.46	7.25	Yes
Kashi	6.61	4.93	5.04	5.68	Yes
Special K	7.54	5.86	7.39	7.25	Yes
Nature valley	7.43	5.43	6.89	7.21	No
Planters peanuts	6.86	5.25	7.61	7.61	No
Sun-Maidraisins	6.75	5.00	7.11	6.75	No
Tropicana	6.75	5.46	7.61	7.46	No
Yoplait	6.71	5.36	6.86	7.00	No
Fiberone	6.68	5.18	5.96	5.61	No
Welch'S	6.68	5.14	7.79	6.96	No
Kashi	6.61	4.93	5.04	5.68	No
Oceanspray	6.61	5.11	7.07	6.75	No
Prego	6.57	5.32	7.50	7.00	No
Minutemaids	6.57	5.82	7.75	7.14	No
Heinz	6.46	5.36	8.14	7.43	No
Eggland's Best	6.39	5.25	4.61	5.29	No
Pillsbury	6.36	5.29	7.93	7.64	No
Bisquick	6.21	4.75	7.39	7.00	No
Olive-Garden	6.11	5.96	7.79	7.54	No
Delmonte	6.04	5.64	5.18	5.86	No
Weightwatchers	5.89	4.39	6.57	5.43	No
Craisins	5.89	4.64	5.04	5.43	No
Saralee	5.86	5.79	7.21	6.96	No
Smucker'S	5.75	5.14	7.21	6.86	No
Nakedjuice	5.75	5.29	3.71	5.68	No
Sunbeambread	5.64	4.96	4.14	5.14	No
Birdseye	5.54	5.14	4.00	5.36	No
Kleinpeter	5.00	4.71	2.43	4.86	No

APPENDIX VII
SCALE ITEMS: SELF-CONTROL

1. I am good at resisting temptation.
2. I have a hard time breaking bad habits. (R)
3. I am lazy. (R)
4. I say inappropriate things. (R)
5. I do certain things that are bad for me, if they are fun. (R)
6. I refuse things that are bad for me.
7. I wish I had more self-discipline. (R)
8. People would say that I have iron self- discipline.
9. Pleasure and fun sometimes keep me from getting work done. (R)
10. I have trouble concentrating. (R)
11. I am able to work effectively toward long-term goals.
12. Sometimes I can't stop myself from doing something, even if I know it is wrong. (R)
13. I often act without thinking through all the alternatives. (R)

Note: Scale from Tangney, Baumeister, and Boone (2004)

VITA

Nobuyuki Fukawa is an assistant professor of marketing in the Department of Business and Information Technology at Missouri University of Science and Technology. He earned his bachelor of art degree in business from Hitotsubashi University, Tokyo, Japan, and a Master of Marketing Research from University of Georgia as a Coca-Cola Foundation Scholar. Hitotsubashi University awarded him with a one-year study program opportunity at the University of California, Riverside, in 1998. He also received The Daryl McKee Doctoral Study Memorial Award from LSU Marketing Department in 2009.

His research interest lies in the area of hedonic memory processes (e.g., affect, imagination) and their effects on consumer behavior, brand equity, advertising, and marketing strategy. His research has been published in various journals, including the *Journal of Advertising*, *Industrial Marketing Management*, and *Marketing Management Journal*. His research is also published as a book chapter of *Supply Chain*. He has presented his research at various conferences, including the Academy of Marketing Science and the Advertising & Consumer Psychology Conference. His interest is in teaching the principle of marketing, marketing strategy, and consumer behavior. Prior to his academic career, he worked in sales and marketing for five years at Dell Japan and Coca-Cola Company (Japan).

The degree of Doctor of Philosophy will be conferred on Mr. Fukawa at the December, 2010 Commencement.