TWO ESSAYS ON THE OUTCOMES OF SELF-REGULATORY FAILURES: THE ROLES OF COGNITIVE DISSONANCE AND SELF-SCHEMA ACTIVATION

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A dissertation submitted in partial fulfillment of
the requirement for the degree of

DOCTOR OF PHILOSOPHY

WASHINGTON STATE UNIVERSITY
College of Business

MAY 2009

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ACKNOWLEDGEMENT

My dissertation is a product of the trust and confidence my committee members have invested in me as a scholar. First of all, I am grateful to my advisor Dr. David E. Sprott, for his always encouraging and never patronizing attitude, which gave me plenty of room and autonomy to develop into the independent researcher I wanted to be. My chronically worried mind found comfort every time I talked to him and many of my exceedingly abstract ideas were materialized through his practical suggestions. I feel fortunate to have had Dr. Eric R. Spangenberg on my dissertation committee as well. From the moment we met, he has always treated me as a colleague rather than a student, and has supported me unconditionally. His helping hand and generosity have seen me through tough times of the graduate school life. Dr. Jeff Joireman's Attitudes and Social Cognition seminar was one of my favorite classes, largely due to his analytical faculty, critical mind, and subtle jokes. I was delighted when he agreed to join my committee and our discussions have helped me challenge my theoretical perspective and relate my work to real life. I am especially thankful to Dr. Joireman for listening to my occasional venting and helping me stay on track.

I also wish to thank Dr. Darrel Muehling for his continuing support throughout the Ph.D. program and the Department of Marketing at the Washington State University for giving me access to resources that were indispensable for the completion of my dissertation. Thanks are also due to Dr. Yany Grégoire for his warmth, understanding, and constructive criticisms. I am grateful to Dr. Jean L. Johnson who has provided valuable career advice when I needed it most. I absolutely admire her unfaltering stance and candor as a person and scholar.

On a personal note, no words can describe how much indebted I feel to my mother, Pervin Devezer, and my sister, Jülide Devezer, whose strength and love I have exploited leisurely and selfishly throughout these years. I love and admire them both and can only hope that it is now my turn to be there for them. Finally, I would like to thank my best friend and husband, Erkan Ozge Buzbas, whose inexhaustible curiosity and drive have inspired my own intellectual journey at so many levels. With him, my life never runs out of hope, passion, and adventure.

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Abstract

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May 2009

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The objective of this dissertation is to investigate the role self-regulatory failures in consumer behavior, by advancing theory and exploring practical implications. Specifically, I seek to understand to what extent behavioral lapses influence subsequent self-regulation and under what conditions failure facilitates future goal pursuit. I investigate the outcomes of self-regulatory failures with two essays, each proposing a separate theoretical framework to address a diverse set of research questions. Theoretical models buttressed by five experimental studies provide substantive conclusions for consumer self-regulation and welfare.

In Essay One, I draw on cognitive dissonance and hierarchical goal systems to enlighten the psychological processes that are triggered by subgoal failures and explore their upstream outcomes in the goal hierarchy. Specifically, I hypothesize that a behavioral lapse engenders cognitive dissonance, which is relieved by reducing commitment to the corresponding endgoal. These expectations find support across three experiments in the contexts of saving and pro-environmental consumption. Moreover, this downward adjustment in endgoal commitment is shown to indirectly decrease future subgoal setting in the same motivational domain. Three

moderators that alleviate the detrimental effects of subgoal failure are identified: endgoal specificity, self-concordance of the endgoal, and aversive consequences of the subgoal failure.

Essay Two focuses on situations where feedback generated by regular consumer behaviors is ambiguous in nature. In such cases, a temporarily activated self-schema is hypothesized to act as a goal standard by which behaviors are assessed. I expect that an initial behavior that is incongruent with the active self-schema will be interpreted as a self-regulatory failure. Initiating symbolic self-completion process, this failure will lead to the (de)valuation of schema-(in)congruent means. On the other hand, a schema-congruent behavior will result in an inference of self-regulatory success, which will release the ongoing self-regulation process and cause the evaluations of schema-congruent and –incongruent means to converge. In the absence of an active self-schema; however, a pattern of behavioral consistency is expected. These predictions are tested and supported in two studies across health conscious and hedonic self-schemata. Moreover, behavioral intensity is shown to be a significant moderator which enhances motivating effects of self-regulatory failure.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

Dedication

This dissertation is dedicated to two beautiful and gallant women,
my mom Pervin and my sister Jülide. They are my eternal sunshine,
no matter how much time or distance comes between us.

CHAPTER ONE

INTRODUCTION

A key premise of motivational models in consumer research is the goal-directedness of consumer behavior (Bagozzi and Dholakia 1999; Bettman, Luce, and Payne 1998; Pham and Avnet 2004). Rather than making their decisions in a motivational vacuum, consumers act in the context of goals that they pursue and desires that they seek to fulfill (Pham and Higgins 2005). Viewed from this motivational perspective, consumers' decisions and behaviors are driven by active goals and hence, are instrumental in the attainment of the desired end-states. Put simply, self-regulation lies at the heart of the entire consumption process. Growing research in the field of consumer behavior has documented that consumers seek to self-regulate through performing goal-congruent behaviors and making goal-congruent choices (e.g., Bagozzi and Dholakia 1999; Brendl, Markman, and Messner 2003; Markman and Brendl 2000). Yet empirical evidence and common sense alike attest that consumers often fail in self-regulation (e.g., Baumeister and Heatherton 1996; Carver and Scheier 1998; Soman and Cheema 2004; Vohs and Heatherton 2000). *What happens when self-regulation fails?* What outcomes ensue if consumers engage in behaviors incongruent with their goals and make choices that are inhibitory to the attainment of the desired ends?

Consumer research has yet to examine the broad consequences of self-regulatory failures with regard to future consumer decisions, goal-pursuit, and welfare. Few researchers have examined the effects of failures in the context of consumer behavior, focusing on a limited subset of potential outcomes (e.g., Fishbach and Dhar 2005; Soman and Cheema 2004). Disregard for the far-reaching consequences of self-regulatory systems, further complicated by challenges in

the operationalization of central constructs such as "failure," likely explains this dearth in knowledge. Despite increasing interest of consumer researchers in the study of consumer goals and self-regulation (e.g., Fishbach and Dhar 2005; Brendl, Markman, and Messner 2003; Laran and Janiszewski 2009; Markman and Brendl 2000; Novemsky and Dhar 2005; Van Osselaer et al. 2005), *self-regulatory failure* per se remains under-researched (Fishbach and Dhar 2007), leaving us in the dark as to the consumption-related outcomes of goal-incongruent experiences, behaviors, and choices.

As such, this dissertation seeks to explain how self-regulatory failures influence future pursuit of goals and to investigate a wide range of consumer-centered outcomes ensuing from this motivational process. A large body of research predicts that an initial failure will lead to demotivation and increase the tendency to disengage from an ongoing goal pursuit (e.g., Seligman 1975; Bandura 1986; Soman and Cheema 2004). Yet other research has proposed that failure might actually enhance motivation and increase subsequent task performance under certain conditions (e.g., Carver and Scheier 1998; Brunstein and Gollwitzer 1996). In this dissertation, I acknowledge both sets of outcomes and seek to reconcile these contradictory perspectives, by extending the scope of extant research in both theoretical and practical dimensions by means of two stand-alone essays. In Essay One, I develop a cognitive dissonance based theoretical framework in order to explain psychological processes underlying the consequences of failure and to identify boundary conditions under which an initial failure does not decrease future goal commitment. In essence, this first essay offers a process-based account of behavioral lapses and works in a simplified motivational setting, focusing on a single goal at a time, in order to provide a detailed understanding of the underpinnings of goal pursuit. Essay Two adopts a broader perspective, accounting for the complexity of goal-systems in which

people may pursue competing goals simultaneously, and seeks to identify why and when failure will inhibit some of these goals while facilitating others. To accomplish this, I develop a novel theoretical framework which I call the self-schema activation model of self-regulation.

Task performance following failure has been the focal dependent variable studied by most researchers in self-regulation (e.g., Bandura 1986; Brunstein 2000; Brunstein and Gollwitzer 1996; Elliott and Dweck 1988; Seligman 1975; Soman and Cheema 2004). In other words, the focus of attention has been on how a failure would influence people's performance on the subsequent identical or equivalent task. Translating this into a consumer research example, extant research has primarily studied whether a person who impulsively eats a slice of chocolate cake instead of a piece of fruit would choose a high- or low-calorie option in the following consumption episode. While recognizing the importance of such insight into specific consumer choices, the present research advocates the necessity of a global understanding of consumer goal processes if we are to illuminate the instrumentality of self-regulation for consumer wellbeing as well as the intricacies of multiple goal pursuits. Taking into account the hierarchicality of goal systems, Essay One purports to examine the higher level consequences of lower level failures. Going back to the previous example, this essay aims to address how an initial choice of cake over fruit influences a person's subsequent health related goals and decisions. As such, the objective of this research is to study the consequences of an individual lapse of behavior with regard to the long-term pursuit of more abstract superordinate goals. Taking a further step on this route, Essay Two investigates how failure in one domain may influence the evaluation of goal-congruent and –incongruent means (e.g., products). Overall, both essays combined provide a complete picture of horizontal and vertical dynamics within the goal hierarchy that are prompted by self-regulatory failures.

Notably, this dissertation aims to contribute to consumer research further by focusing on the practical implications of the proposed results. Literature on self-regulation and goal failures is abundant with research exploring the role of traits and individual dispositions with an objective of understanding and describing the natural phenomena. Variables that have been of interest include but are not limited to goal orientation (e.g., Elliott and Dweck 1988), self-efficacy beliefs (e.g., Bandura 1986, 1989), self-defining goals (e.g., Brunstein 2000; Brunstein and Gollwitzer 1996), self-esteem (e.g., Kernis, Brockner, and Frankel 1989), and self-complexity (Koch and Shepperd 2004; Linville 1985, 1987). Being an applied discipline, consumer research has been particularly interested in situational variables rather than personality traits as the former have direct marketing and public policy implications. Consistent with this perspective, Essay One introduces three moderators for the effects of failures on subsequent goal pursuit, two of which are goal-specific factors (i.e., specificity of an endgoal and aversive consequences of a subgoal) that can be induced via framing techniques in practice. In addition to these, Essay Two explicitly probes the role of temporary self-schema activation in the outcomes of self-regulatory failures. Each essay informs potential practical implications particularly in the domain of public policy and social marketing.

RESEARCH CONTEXT AND AGENDA

As described earlier in this chapter, the primary motivation inspiring this dissertation is to appreciate the importance of self-regulatory failures in understanding consumer behavior and welfare. I present two stand-alone essays, both empirical, that complement each other in terms of theoretical focus as well as the scope of explored outcomes. The theoretical framework used in each essay is developed separately to address the specific research questions set forth. While

each paper aims to make important unique contributions on the motivational underpinnings of consumer behavior, when combined together they aim to shed light on the *what*, *how*, *when*, and *why* of the consequences of self-regulatory failures. In particular, the proposed dissertation asks and strives to answer the following research questions:

1. *What* constitutes a self-regulatory failure? What determines that a behavior or event will be perceived and recognized as failure? (Essay Two)
2. *How* does a failure influence subsequent goal pursuit? What kind of cognitive and motivational processes are involved in the generation of its outcomes? (Essay One)
3. *When* do the detrimental consequences of failure disappear (Essay One)? *When* does failure motivate subsequent goal pursuit (Essay Two)?
4. *Why* are certain failures more or less influential on subsequent motivation and decisions than others? In other words, why does the outcome of a particular behavior vary across situations depending on whether it is perceived as a failure or not? (Essay Two)

Other than these focal questions, several other, more specific questions arise that this dissertation seeks to answer.

5. What kind of influence does a simple behavioral lapse have on long-term pursuit of welfare-enhancing consumer goals? What kind of structure and processes enable this link between low-order actions and higher-order values? Specifically, what roles do hierarchicality of goal systems and cognitive dissonance play in this framework? (Essay One)
6. What is the role of self-concept in the self-regulation process? How does the malleability of self-concept affect the outcomes of failures? In what ways does failure in one goal domain impact on the goal-related outcomes in a competing domain? (Essay Two)

ORGANIZATION OF THE DISSERTATION

In fulfillment of the research objectives, the dissertation is prepared as two separate, stand-alone essays. To appreciate the complementary nature of the papers, however, it is necessary to weave together multiple distinct bodies of knowledge before proceeding with the individual essays. Therefore, in Chapter Two of the dissertation, I provide an overview of research on self-regulation and goals in order to introduce key concepts and lay down theoretical underpinnings of my research. Subsequently, I proceed with self-regulatory failures to pinpoint the inconsistencies and gaps in the literature that motivate this dissertation.

Following a detailed review of the literature, Chapter Three presents Essay One, which is an empirical treatment of the effects of subgoal failures on the pursuit of welfare-enhancing consumer goals. A cognitive dissonance based framework guides this essay and allows derivation of boundary conditions alleviating the detrimental effects of failures. Essay One includes three experimental studies testing the effect of three moderating variables derived from the cognitive dissonance literature. The methods section includes complete description of the data collection process and the research methods used as well as the results of the analyses, followed by a discussion section.

Essay Two follows, which comprises Chapter Four of the dissertation. Drawing on self-completion theory and cybernetic control mechanisms of self-regulation, this essay develops a model of self-schema activation in order to investigate the role of malleable self-concept in the outcomes of self-regulatory failures. The introduced framework provides novel insight into sequential consumer choice. Model hypotheses are tested via two experimental studies. Following the analyses, the limitations and the implications of this research are discussed and new research questions inspired by the current findings are introduced.

Chapter Five recapitulates the motivation underlying this dissertation and provides a general summary of the findings. To put the theoretical focus of this dissertation into perspective, I conclude by a pithy overview of my research philosophy.

CHAPTER TWO

THEORY AND CONCEPTS

In this chapter, I provide an overview of the concepts and theories that this dissertation is based on. I begin with an overall review of goal concepts in the literature. Next I will discuss extant theories of self-regulation and goal-systems as well as their implications with regard to consumer behavior. Then I proceed with the review of the research on self-regulatory failures and lay out the conceptual framework for this dissertation.

BACKGROUND: SELF-REGULATION AND GOALS

Theories of self-regulation and motivation assume that people set themselves goals and perform goal-directed behaviors to achieve desired end-states (e.g., Bagozzi and Dholakia 1999; Carver and Scheier 1998; Deci and Ryan 2000; Latham and Locke 1991). In general, the term *self-regulation* is used loosely to refer to the entire cycle of goal setting and goal striving in which people set goals, monitor their level of progress toward these goals, demonstrate commitment by controlling their cognitions, actions, and choices in accordance with these desired end-states, and accomplish or disengage from their goals. At the center of the process of self-regulation lies the concept of *goal* which is defined as the "internal representation of desired states, where states are broadly construed as outcomes, events or processes" (Austin and Vancouver 1996, p. 338). These mental representations are believed to be organized in a system of motivational networks composed of interconnected goals and means; thus, the goal concept has both cognitive (e.g., inter-connectedness among goals and means) and motivational (e.g., effort, performance, persistence, and so on) components (Kruglanski et al. 2002). Goal systems

are conceptualized in a hierarchical cognitive structure. The properties and the structure of this hierarchical system are discussed briefly in the following section.

Hierarchy and Properties of Goal Systems

The hierarchical structure of goal systems implies that goals that proximally regulate motivation and action subserve as means to achieve broader goals that represent matters of personal importance and value (e.g., Austin and Vancouver 1996; Pervin 1989). In other words, lower level goals which have been interchangeably labeled as *means, subordinate goals,* or *subgoals* in the literature designate instrumental behaviors, events, or processes that would enable people to achieve higher-order *ends, superordinate goals,* or *endgoals* which have more abstract mental representations (Bagozzi and Dholakia 1999). The goal network does not only contain simple means-ends chains formed by vertically connected means and ends but also more complex structures generated by interconnected means-ends chains via horizontal associations between lateral elements (e.g., between competing means and goals; Kruglanski et al. 2002). As a result, we can talk of two major properties of goal systems: *multifinality* and *equifinality*. Multifinality of goals signifies that a specific means can be instrumental in achieving multiple goals. For example, engaging in regular exercise might improve a person's health as well as his or her physical attractiveness. Equifinality of the goals, on the other hand, connotes that a particular goal can be achieved through a number of means. In order to enhance physical attractiveness, one may diet, exercise, dress well, or might even undergo plastic surgery.

Researchers have offered various hierarchical structures to model the nature of goal networks, in which they focus either on the relative role of individual elements in the system or the content of the elements. A well-known example of the former in the marketing literature is the three-tiered goal hierarchy of Bagozzi and Dholakia (1999). These researchers have

contended that goal hierarchy is constructed based on the respective role that a goal plays and the function it serves in a means-ends chain, regardless of its content. At the lowest level of this hierarchy are the *subordinate goals* which reflect *how* a person would achieve a desired end. *Focal goals* refer to that end which a person strives for. Lastly, at the highest level are the *superordinate* goals which comprise the ultimate objective or the *why* of the goal pursuit. This three-tiered structure is merely a simplified representation of a multi-layered hierarchical system and does not convey that a means-ends chain will necessarily consist of three elements. Rather, in a long chain, any three successive elements will have the corresponding superordinate, focal, or subordinate roles with respect to each other. Thus, as implied by the content-independence of the model, a particular goal can be conceptualized in different levels of the hierarchy relative to other goals that it is associated with. Other researchers have also studied similar, hierarchically structured goal networks (e.g., Fishbach, Dhar, and Zhang 2006; Kruglanski et al. 2002). While useful when studying the interconnections among various goal concepts and the regulation of specific goal processes, such hierarchies do not shed light into the principal motivations driving human behavior since they do not incorporate goal content.

An alternative four-level hierarchy is proposed by Carver and Scheier (1998) in order to conceptualize the organization of goal networks. In their framework, hierarchicality is determined by different levels of abstraction goals might have. The stages in the hierarchy are not defined in relative terms but more objectively based on the goal content. At the top of the hierarchy are the *system*-level goals which contain values of high level abstraction such as the ideal self. Self-regulation with respect to system concepts necessitates further goals of the next lower level, which provide *principle*-level control. Principle concepts are characterized by the command "be" where people strive to be someone compatible with the idealized form of the self.

Since principles do not provide specific forms of behavior to enable self-regulation, the next step—*program*-level—comes into play. Programs prescribe what a person should "do" in order to be the person specified by the principles. In this level, an overall course of action or a general form of behavior is specified without including any details. At the lowest level are the *sequences* which are distinguished from programs by their specificity, concreteness, and automaticity. In other words, sequences correspond to motor control goals. This content-specific characterization of goal-hierarchy has proved to be useful in studying the taxonomy of real-life goals people pursue and understanding the genuine motivations behind their actions (e.g., Ligas 2000; Paulssen and Bagozzi 2006).

Having discussed the cognitive structure of hierarchical goal systems, the next section provides an overview of its motivational operation while reviewing a selection of arguably most influential theories of self-regulation. The tenets of the expectancy-value theory, the theory of goal setting, cybernetic systems of self-regulation, and the recently introduced theoretical framework on the dynamics of self-regulation are discussed briefly. While going through each of these streams separately, I also introduce and define the related goal systemic concepts.

Expectancy-Value Theory

Expectancy-value theory views behavior as a function of the expectancies with regard to the outcomes of the behavior and the value placed on those outcomes (Atkinson 1964; Fishbein 1967; Vroom 1964). An inherent assumption of the theory is that human behavior is goal-directed and is undertaken to achieve a desired end. The expectancy-value theory predicts that, when choosing among multiple behaviors, people will prefer the option with the highest subjective probability of success and the most valuable outcomes. In other words, motivation to perform an activity and commitment to a goal increases as a function of expectancy and value

associated with the activity. The major criticism associated with the expectancy-value models of motivation has been that people do not necessarily seek to optimize outcomes when making decisions (Bandura 1989). Researchers have suggested that people generally fail to consider alternative courses of action in a systematic fashion and to weigh the associated consequences rationally. Instead, they tend to overlook available alternatives and do not evaluate the outcomes thoroughly. Although expectancy-value theory has had significant impact on decades of research on motivational sources of behavior, it appears to fall short of providing a complete model of self-regulation (Bandura 1989; Heath, Larrick, and Wu 1999).

Goal-Setting Theory

Goal-setting theory, similar to expectancy-value theory, assumes that human behavior is goal-directed (Latham and Locke 1991; Locke and Latham 1984, 1990). The theory investigates the process of self-regulation with a particular focus on the motivational sources of task performance. Overall, goal setting has been found to be an effective method of increasing motivation and task performance, particularly in the presence of certain moderators. One of the consistent findings in this stream of literature has been that there is a linear relationship between goal difficulty and task performance (Latham and Locke 1991; Locke and Latham 2002). Demanding goals have been found to result in greater performance than medium or easy goals. In addition to this basic relationship, another consistent finding is that setting specific and challenging goals lead to higher performance than vague, "do your best" goals (Latham and Locke 1991; Locke and Latham 2002).

Besides *task complexity* or *difficulty,* other major moderators that have been found to affect the relationship between goal setting and performance are goal commitment and feedback. *Goal commitment* is defined as the degree to which the person is attached to a goal, finds it

important, is determined to attain and willing to invest effort in it, and persists in the face of obstacles or setbacks (Fishbach and Dhar 2005; Oettingen, Pak, and Schnetter 2001; Tubbs 1993). Commitment is found to have the most positive effect on goal performance when goals are difficult (Latham and Locke 1991; Locke and Latham 2002). *Feedback*, or knowledge of results, is necessary in self-regulation to infer progress toward or distance from a goal. Specifically, research has shown that goal setting and feedback in combination are more effective than goal setting alone (Latham and Locke 1991; Locke and Latham 2002). Although the majority of research in this stream has not explicitly studied self-regulation (Latham and Locke 1991), goal setting can easily be viewed as a first step in self-regulation. Setting goals makes objectives explicit, directs actions toward the attainment of desired states, and induces discrepancy via a feedback mechanism. To have a closer look at self-regulation through discrepancy reduction, now I proceed with a different theoretical framework and summarize the basic premises of cybernetic systems.

Cybernetics and Discrepancy-Reducing Feedback Processes

Cybernetics—as originally defined by Norbert Wiener (1948), a mathematician, engineer and social philosopher—refers to the broad field of study investigating complex systems through control and feedback mechanisms. The basic unit of cybernetic control is the *negative feedback loop* wherein a sensed value is compared to a reference value or standard and output function is adjusted to move the sensed value closer to the standard (Carver and Scheier 1998). Such feedback systems are self-regulatory since they internally regulate certain qualities. When applied to the self-regulation of human behavior, cybernetic feedback control systems shed light on how people adjust their behaviors in order to reduce the perceived discrepancy from the goal standard (Carver 1979; Carver and Scheier 1981). Self-regulatory processes monitor the

consequences of one's actions and compare them to reference values, while making adjustments to minimize discrepancies (Carver and Scheier 1998). This framework of feedback processes also takes into account the hierarchical structure of goal systems. Higher-order goals provide reference values to lower levels of the hierarchy and the outcomes of lower-order goals are compared to these standards to make an assessment of the distance from the desired state (Carver and Scheier 1998). Providing a structured and rich model of complex self-regulatory systems, the study of cybernetics has significantly contributed to our understanding of purposeful human behavior.

Dynamics of Self-Regulation

A recent stream of literature has proposed a new framework to study self-regulation distinguishing between inferences of goal commitment and goal progress (Fishbach and Dhar 2005, 2007; Fishbach, Dhar, and Zhang 2006; Koo and Fishbach 2008). In this framework, goals are viewed as cognitive structures that are either represented in terms of movement to a desired state or as commitment to that desired state. In a system of multiple goals, a person's relative focus on goal progress or goal commitment is expected to determine subsequent regulating behaviors toward each goal (Fishbach and Dhar 2005). In particular, if a behavior is interpreted as an indication of goal commitment, the motivation to perform similar behaviors should increase. On the other hand, if a person views the behavior as an indication of goal progress, the perceived reduction in the distance from the end-state will motivate the pursuit of competing goals (Fishbach, Dhar, and Zhang 2006). The extant research on the dynamics of self-regulation, therefore, diverges from the previous theoretical perspectives in that the focus has been on the framing of a behavior in terms of progress versus commitment rather than on the cognitive and motivational processes underlying self-regulation.

The preceding literature review has established the goal-directedness in human behavior as a major assumption underlying the current dissertation and has outlined the functioning of self-regulatory systems. One important issue that has been left out of the discussion thus far is the scope and range of outcomes derived from the process of self-regulation. Why is it important to understand motivational roots of the behavior? What kind of consequences emanate from the pursuit of goals? The following section aims to address these questions with particular consideration of the implications regarding consumer behavior.

Consumer Behavior as Self-Regulation

Consumers engage in judgment and decision making, make purchases, and perform a variety of consumption-related behaviors to attain one or more desired end-states (Bagozzi and Dholakia 1999). Thus, consumption as a whole can be regarded as instrumental in goal attainment (Ligas 2000) and thus, is an essential part of the self-regulation process. Consumer researchers have studied a wide array of consumption-related activities ranging from positive, socially desirable consumer behaviors (e.g., recycling, Bagozzi and Dabholkar 1994; dieting, Bagozzi and Edwards 2000; saving, Soman and Cheema 2004) to valuation and devaluation of alternatives (e.g., Brendl, Markman, and Messner 2003; Markman and Brendl 2000) and product choice (e.g., Novemsky and Dhar 2005; Van Osselaer et al. 2005) from a goal-theoretic perspective. The study of goals and motives helps us understand what consumers want, how they evaluate the consumption environment, what behaviors they would perform, and which choices they would make to attain the desired ends (Richins 2002).

Notably, goals are critical to value inferences in choice situations (Brendl, Markman, and Messner 2003; Van Osselaer et al. 2005). Active goals are known to act as a filter through which information processing occurs. Means are evaluated according to the extent that they are

facilitative to the attainment of an active goal (Kruglanski et al. 2002). Research has provided evidence for the valuation of goal-congruent objects (Brendl, Markman, and Messner 2003) as well as for the devaluation of goal-irrelevant objects (Markman and Brendl 2000). These findings indicate that perceived value from consumption depends on the dynamics of goal systems.

The self-regulation literature and goal-theoretic concepts introduced thus far form the broad theoretical foundations on which the present dissertation is built. In the following section on self-regulatory failures, I narrow down the theoretical scope further to set the stage for the dissertation essays. Focusing on the general aspects of self-regulatory failures, I aim to introduce the relevant concepts and provide a general outline of the theoretical background. A more detailed discussion of the literature on failures will be provided later on for each essay in Chapters Three and Four, which constitute the backbone of this dissertation.

DISSERTATION FRAMEWORK: SELF-REGULATORY FAILURES

In the preceding section, I introduced the concept of goal-directedness of human behavior which refers to the self-regulatory processes by which people perform behaviors that enable them to achieve desired end-states. Yet people sometimes relinquish or abandon this process of self-regulation and engage in goal-inconsistent behaviors (Carver and Scheier 1998). A behavioral lapse that inhibits an ongoing goal pursuit is called *self-regulatory failure*. An important distinction must be made between self-control failure, which is a narrower concept, and self-regulatory failure in the broader sense, which the present dissertation examines. Self-control failure refers to the cases where an action tendency at a low level of abstraction (i.e., an impulse) overrides actions directed by the goal pursuit at high levels of abstraction (Baumeister

and Heatherton 1996). Self-regulation, in general, encompasses but is not limited to self-control, and refers to a wide range of attempts to shift the current state closer to reference values (Carver and Scheier 1998; King 1996). Therefore, self-regulatory failure goes beyond impulsive behaviors to include all types of cognitions, behaviors, experiences that move a person away from desired end-states. These action tendencies do not necessarily arise as an outcome of motives having low levels of abstraction but may ensue from the interference of competing higher order pursuits as well (Kruglanski et al. 2002).

This dissertation treats self-regulatory failures not as final outputs of a system but as inputs or starting points, seeking to explain their outcomes via two essays investigating two different theoretical mechanisms. Research on self-regulation and goals has proposed a number of theoretical explanations to account for the consequences of failure, focusing on its effects on subsequent performance. In particular, a substantive body of research has studied the detrimental effects of failure on subsequent performance whereas other researchers have examined its positive effects on performance.

Detrimental Effects of Self-Regulatory Failure

Pioneering this negative view of self-regulatory failure has been the *learned helplessness* researchers (Brunstein and Gollwitzer 1996). Motivated by research on avoidance learning in animals, learned helplessness theory suggests that uncontrollable failures result in performance deficits (Abramson, Seligman, and Teasdale 1978; Seligman 1975). People who experience repeated failures develop an expectation of low control and noncontingency of future outcomes. As a result, people experience motivational deficits and fail to initiate necessary actions or responses that would enable future self-regulation. In other words, this learned helplessness translates into weak performances on subsequent tasks (Abramson, Seligman, and Teasdale

1978). The original formulation of the learned helplessness theory has been subject to criticisms on several fronts (Ford and Brehm 1987). First, the empirical research has viewed the theory as a framework to study depression despite the lack of evidence for performance deficits in domains unrelated to the initial failures. Thus, the empirical work has not provided strong support for generalizations from uncontrollable to controllable situations. Second, the theory fails to explain why failure sometimes leads to performance enhancements. Lastly, focusing on performance as the primary dependent variable has been criticized since the association between expectations of noncontingency and task performance is not very straightforward (for more detail on these criticisms, see Ford and Brehm 1987). In order to address this growing disappointment with the learned helplessness theory, Abramson et al. (1978) reformulated the theory to identify boundary conditions under which the hypothesized detrimental effects of failure take place. In particular, they claimed that the noncontingency expectations would generalize across situations only when the attributions are stable and global. However, since there are no valid means to assess expectations, the reformulated theory remains to be infalsifiable and hence, not very adequate to examine the consequences of failure (Ford and Brehm 1987).

In response to the problems associated with the learned helplessness framework, Brehm and his colleagues have proposed a more parsimonious and comprehensive account of the effects of failure on subsequent motivation, which they have called the *energization model* (Brehm et al. 1983; Ford and Brehm 1987; Wright and Brehm 1989). The major premise of this framework is that the desirability of a potential end-state is a function of the level of energization which is primarily driven by the anticipated difficulty. Specifically, people perceiving low personal ability as a result of prior failure should experience greater energization when faced with a task of low difficulty whereas those perceiving high personal ability should be more energized to pursue

relatively difficult tasks and demonstrate successful performance. A prerequisite for such effects to occur is that the failure information provides diagnostic evidence for anticipated difficulty (Ford and Brehm 1987).

A similar conceptualization of the effects of failure has been advised by Bandura (1986, 1989) who argues that perceptions of *self-efficacy* determine effort expenditure on a subsequent task. If failure results in decreased levels of self-efficacy, motivation on future tasks should decrease in a way to inhibit further goal pursuit. People having high levels of self-efficacy should remain unaffected in the face of failure, continuing to exert self-regulatory efforts. The major criticism for this view holds that self-efficacy researchers have often studied other dimensions of self besides efficacy (Carver and Scheier 1998), which necessitates a broader evaluation of the role of self in the outcomes self-regulatory failures. Moreover, the framework does not clearly predict the subsequent level of motivation following a failure at high levels of self-efficacy.

The theoretical frameworks reviewed so far make predictions in line with those of the classic *expectancy-value* theories (Atkinson 1964; Fishbein 1967; Vroom 1964), which conjecture that failure experiences will reduce future expectations of success, thereby reducing motivation and subsequent performance. Overall, the majority of research on the detrimental effects of failure provides a relatively narrow perspective, due to the omission of potential motivating effects and the exclusive focus on subsequent task performance as the primary dependent variable. Chapter Three of the current dissertation (i.e., Essay One) aims to address these gaps in the literature, adopting an alternative *cognitive dissonance*-based framework which accounts for a wider range of failure outcomes located at different levels of goal hierarchy.

Positive Effects of Self-Regulatory Failures

Cybernetic theories support the opposite view, arguing that failure feedback engenders

discrepancy between a desired end-state and the current state, thereby motivating subsequent discrepancy-reducing actions (Carver and Scheier 1998). In particular, if people have high expectations of achieving the desired outcome, experience of a failure will result in increased efforts to meet the goal standard. Similarly, *goal setting theory* implies that setting specific and challenging goals, which act as reference points, results in better task performance after a failure (Latham and Locke 1991; Locke and Latham 2002). These frameworks explain a good deal of the processes underlying conscious goal pursuit where the reference points are specific, failure is identifiable in an absolute and objective fashion, and failure feedback is clear and unambiguous.

There has also been research trying to conjointly account for both negative and positive effects of self-regulatory failure. A body of research, studying the quality of goals people pursue, distinguishes between *performance* and *learning* motivations, which induce people to approach achievement or self-improvement, respectively (Elliott and Dweck 1988). People having a performance-orientation are expected to perform poorly after an initial failure since it will result in a decrease in perceived ability whereas failure will promote sustained effort and problem solving for those having a learning-orientation (Elliott and Dweck 1988). This framework has been very influential in educational psychology to investigate the processes underlying academic success of students rather than in the broader domain of self-regulation but has not been studied extensively in other applied domains. One possible reason might be that, like all dichotomies, performance and learning goals distinction provides an over-simplified account for the complex nature of motivational systems and overlooks the role of competing goals.

Lastly, the recent stream of research on the dynamics of self-regulation, used the distinction between goal commitment and goal progress to explain the varying outcomes of failure (Fishbach and Dhar 2005; Fishbach, Dhar, and Zhang 2006; Koo and Fishbach 2008).

These researchers have challenged the assumption underlying the bulk of extant self-regulation research that people pursue a single goal at a time. Instead, they assume a more realistic background comprising multiple-goals and multiple-means, and aim to study the dynamic interaction among these simultaneous goal pursuits. In this framework, failure is believed to result in one of two potential inferences—a lack of commitment to a goal or a lack of progress toward it. If people infer low commitment, they are expected to disengage from the present goal pursuit and initiate a new one; on the other hand, if they interpret an initial failure as a sign of insufficient progress, they are expected to demonstrate increased motivation to attain the desired end-state and reduce efforts toward competing goals (Fishbach, Dhar, and Zhang 2006). Diverging from the past research, this stream has established that self-regulatory failures might have important consequences beyond those related to subsequent task performance. At present, the major shortcoming of the *commitment versus progress* framework is that it does not readily explain when a person will infer goal commitment or goal progress, except for the situations where the failure is explicitly framed to imply either option (e.g., asking participants to evaluate their level of commitment to a given goal versus the level of progress toward the goal; Fishbach and Dhar 2005). As such, we cannot predict whether a failure will influence future self-regulation in positive or negative direction unless the failure is framed explicitly.

In Chapter Four (i.e., Essay Two) of the current dissertation, I discuss how in real life failure might be masked in the pretense of a regular, everyday behavior and the feedback might not contain unambiguously defined, diagnostic information as for the self-regulatory status of the behavior. Furthermore, I introduce *self-schema activation* as a form of goal setting which—despite having high levels of abstraction—leads to increased motivation after failure by indicating a lack of goal progress.

CHAPTER THREE

ESSAY ONE

I FAILED…WHAT NOW?

EFFECTS OF SUBGOAL FAILURE ON CONSUMERS' ENDGOAL COMMITMENT

Abstract

Often times, consumers fail to perform specific positive behaviors which can enhance their long term wellbeing and/or the welfare of broader society. Drawing upon the hierarchy of goals and the theory of cognitive dissonance, we examine the relationship between the failure of a behavioral subgoal and commitment to a higher order endgoal. Our studies generally demonstrate that subgoal failure brings about cognitive dissonance, leads to decreased commitment to an endgoal, and indirectly lowers subsequent setting of subgoals. Further, we show that specificity of the endgoal (Study 1), self-concordance of the endgoal (Study 2), and the aversive consequences of the subgoal (Study 3) serve as boundary conditions for observed negative effects of subgoal failures on endgoal commitment.

INTRODUCTION

Failures are finger posts on the road to achievement.—Clive Staples Lewis [1898-1963]

If at first you don't succeed, failure may be your style.—Quentin Crisp [1908-1999]

How often does a consumer violate a diet because of a tempting piece of chocolate, fail to turn off the water while brushing teeth, or forego the effort to recycle a soda can? Although aware of the broader importance of pursuing the higher order endgoals of living a healthy life and contributing to a sustainable and clean environment, all too often consumers still fail with regard to respective subgoals (i.e., individual behaviors performed to achieve higher order endgoals). In this research I contrast the competing perspectives associated with the open question raised by the introductory quotations: Does failure lead us to future achievement or condemn us to further failure? Within an integrative theoretical framework I examine these issues and the extent to which a behavioral lapse at the subgoal level affects commitment to a corresponding higher order endgoal as well as pursuit of subsequent endgoal related behaviors.

The effects of prior goal performance on subsequent goal pursuit have been investigated in variety of disciplines (DiPaula and Campbell 2002; Locke and Latham 2002; Soman and Cheema 2004; Zikmund-Fisher 2004). Poor task performance is suggested to result in negative affect (Cron et al. 2005), downward adjustment of subsequent task goals (Ilies and Judge 2005; Spieker and Hinsz 2004), decreased self-efficacy (Bandura 1989), and ultimately, reduced performance and persistence regarding subsequent behaviors (Shah and Kruglanski 2002; Soman and Cheema 2004). Although the bulk of empirical evidence suggests behavioral failure to have negative consequences on subsequent goal-related behavior, the research record is somewhat

equivocal. There is research suggesting that subgoal failure may actually strengthen motivation for continued goal pursuit depending on situational or dispositional factors (Bandura 1989; Kernis, Brockner, and Frankel 1989) and moderators have been shown to qualify the negative main effect of goal failure (e.g., self-esteem, Kernis et al. 1989; goal orientation, Cron et al. 2005; goal proximity, Cochran and Tesser 1996; focus on goal progress versus goal commitment, Fishbach, Dhar, and Zhang 2006). Most goal-related research, however, focuses exclusively on outcomes with regard to lower order subgoals rather than the hierarchical interplay between subgoals and endgoals and relies on verbal or analytic experimental tasks instead of real-life goals. We do not know, for example, what effect the subgoal failure of eating junk food on a road trip will have on subsequent overall commitment to an endgoal of leading a healthy lifestyle, and whether this is predictive of future behavior beyond a consumer's next incident of choosing what to eat. Thus, the literature on behavioral violations of goals is inconclusive, somewhat fragmented, and lacks a unifying theoretical framework (Ilies and Judge 2005).

We address this gap in the literature using a theoretical framework based on cognitive dissonance and test it in real-life decision contexts with clear, socially normative endgoals (i.e., saving money and pro-environmental consumption). In addition, I identify an individual difference (i.e., self-concordance of endgoal) and goal characteristics (i.e., specificity of endgoal and aversive consequences of subgoal failure) that counter the overriding negative consequences of behavioral failures and conserve motivation for further endgoal pursuit. Importantly, I treat welfare-enhancing goals hierarchically; that is, I focus on the relationship between behavioral subgoals and higher order endgoals (hereinafter *endgoals*). Using this holistic/hierarchical perspective, one can study the large-scale and long-term consequences of behavioral failures as

well as the interplay between different behavioral subgoals serving the same endgoal. I begin with an overview of the goal hierarchy and goal failure literatures, with an eye toward identifying inconsistencies. Theoretical reconciliation is then offered within a cognitive dissonance framework and tested in three experiments. Implications of findings for theory and practice are then discussed.

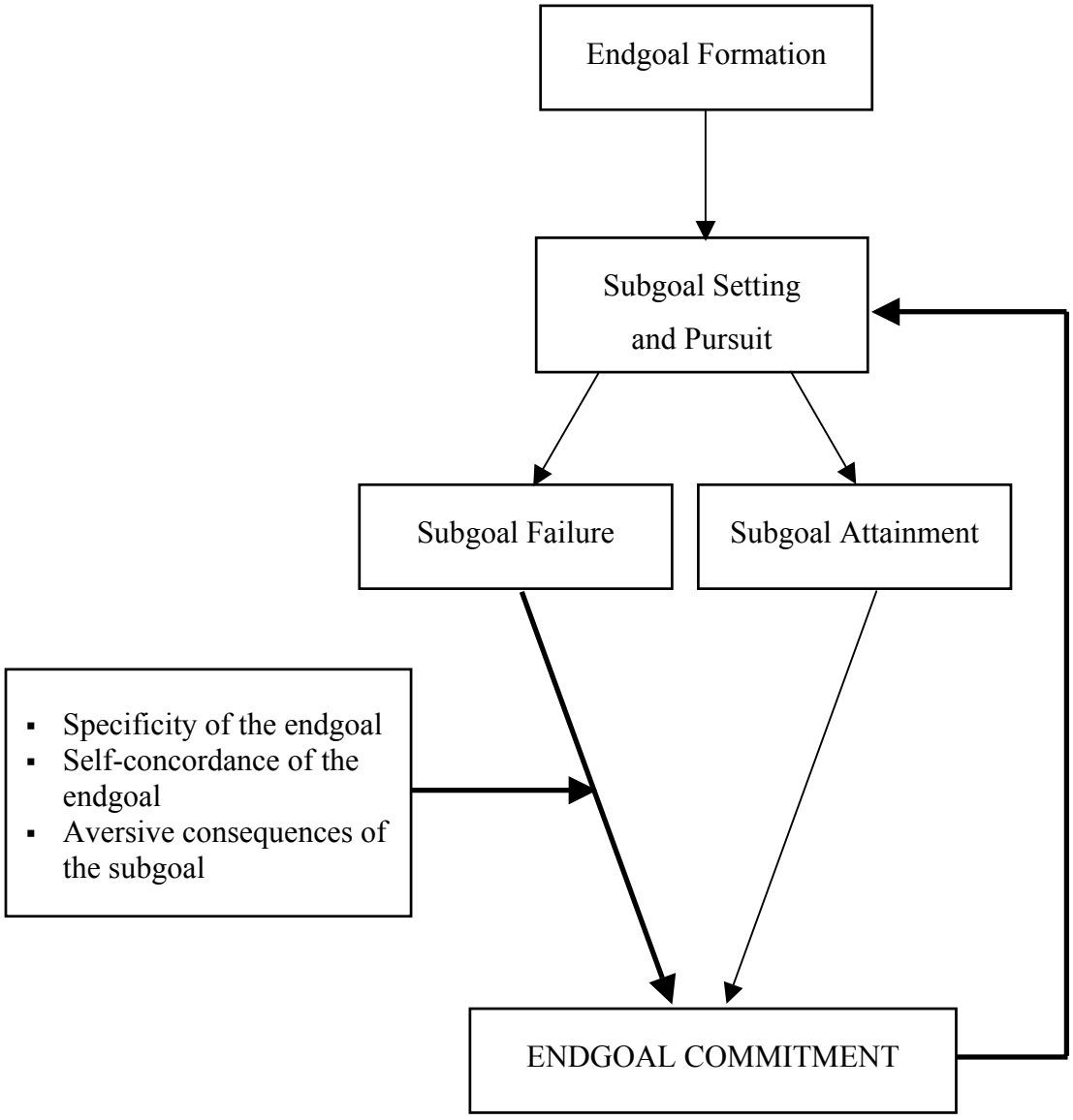
CONCEPTUAL BACKGROUND

A *goal* is defined as an internal representation of a desired state (Austin and Vancouver 1996). As such, most consumer cognitions and behaviors can be viewed as goal-directed and conceptualized as hierarchical (Austin and Vancouver 1996; Bagozzi and Dholakia 1999) with *endgoals* (or higher order goals) constituting the long-term end-states that people ultimately strive to achieve and *subgoals* (or lower order goals) constituting potential behavioral routes by which one attains endgoals. Following Bagozzi and Dholakia's (1999) model of goal setting and striving, subgoals (i.e., actions) and endgoals (i.e., goals) are connected by a feedback loop linking goal attainment or failure to goal setting via feedback reactions. Specifically, people set an endgoal and then identify specific subgoals by which to attain the endgoal, initiate the actions, monitor performance, and consequently infer either success or failure. Feedback regarding subgoals leads to potential adjustment of endgoals and subsequent subgoal setting. Figure 3.1 shows this general feedback process.

Lower order subgoals have been shown to affect motivation to attain endgoals that reflect one's values and identity (Bandura 1989). Subgoal performance is known to be critical with regard to the overall goal pursuit as it may signal both progress toward and commitment to an endgoal (Fishbach et al. 2006). While extant research testifies to the positive effects of subgoal

FIGURE 3.1

HIERARCHICAL MODEL OF GOAL PURSUIT AND THE DETERMINANTS OF THE SUBGOAL FAILURE-ENDGOAL COMMITMENT RELATIONSHIP



NOTE.—Bold lines signify the portion of the model investigated in the current research.

success on future goal setting and performance, the consequences of subgoal failures are not as well understood owing to equivocal empirical findings. I argue that the effects of performance on

goal setting are asymmetric for successful versus unsuccessful subgoal performance due to differences in the direction, nature, and strength of emotions associated with succeeding or failing at a subgoal.

The literature on subgoal failure offers two distinct perspectives. The first finds negative effects of subgoal failure on subsequent behavioral performance and subgoal setting—both effects are widely reported in the literature. For example, a recent study showed that participants who failed at a verbal task (as compared to those who succeeded) lowered their goals for a subsequent trial (Ilies and Judge 2005). Parallel effects are found on goal performance; where failure to attain a behavioral goal is shown to result in demotivation and hence, poor performance (Soman and Cheema 2004). Research has also shown that failure leads to negative affect (Bagozzi and Dholakia 1999; Heimpel et al. 2002; Ilies and Judge 2005), although the mediational role of negative affect has not been conclusively established (Cron et al. 2005). Additional negative consequences of subgoal failures include decreased self-efficacy (Bandura 1989) and decreased task persistence (Shah and Kruglanski 2002). Notably, most negative effects reported in the literature concern goal constructs at the same level of the goal hierarchy (i.e., task or subgoal level). Thus, the direct effect of failing a subgoal in pursuit of a corresponding higher order endgoal remains unknown.

The second perspective counters the first, suggesting that failure of a subgoal could motivate further pursuit of the endgoal (Bandura 1989; Kernis et al. 1989). Negative feedback control systems underlying the self-regulation process suggest that negative performance feedback on goal pursuit might keep people motivated by increasing perceived discrepancy between actual and ideal states (Bandura 1989). In order to decrease this discrepancy and ensure progress, some people may continue to strive for the endgoal and others may set themselves even

more challenging subgoals (Bandura 1989; Fishbach et al. 2006). Several moderators have been proposed to account for such motivating or at least, non-demotivating effects of subgoal failures including self-esteem (DiPaula and Campbell 2002; Kernis et al. 1989), salience of goal progress versus goal commitment (Fishbach et al. 2006), goal orientation (Cron et al. 2005), and subgoal proximity (Cochran and Tesser 1996).

Although clearly receiving scholarly attention, a complete model of behavioral goal failures does not emerge from existing literature for two major reasons. First, most relevant literature focuses on task-level outcome variables (e.g., subsequent task performance) and thereby ignores the consequences of subgoal failures at higher levels in a goal hierarchy. I contend that the impact of subgoal performance on *endgoal commitment* (defined as the degree to which a person is determined to pursue and willing to invest effort in an endgoal; Fishbach and Dhar 2005) is missing from the literature and important to understanding the process of goal pursuit. Consider, for example, a consumer who does not recycle a soda can and registers this as a subgoal failure. While prior research informs us of what might happen the next time this person has the chance to recycle a can, I contend that this subgoal failure should be more broadly considered within the goal hierarchy. Specifically, I posit that such a subgoal failure may lead to a change in one's overall commitment to the larger endgoal of leading an environmentally-friendly lifestyle and could even serve as an influence on behaviors beyond a person's next recycling opportunity (e.g., energy conservation or littering). The second major missing element in the extant literature is a unifying theory that can account for the seemingly unrelated effects reported in the literature. Diverse theoretical explanations for observed findings have been offered while no single theory accounts for the reported main and interactive effects of subgoal failure. Herein I address these shortcomings by studying subgoal failure within a goal hierarchal

framework and proposing an integrative theoretical framework based on cognitive dissonance.

THEORETICAL FRAMEWORK AND HYPOTHESES

Festinger's (1957) cognitive dissonance is one of the most enduring theories of social psychology over the last half century. While many interpretations and manifestations of dissonance have been proposed, the basic notion postulated by Festinger—that holding inconsistent cognitions creates dissonance (a state of psychological discomfort) which in turn motivates a person to reduce this negative state—remains constant. I contend that subgoal failure may simply be a special case of the cognitive dissonance phenomenon.

In particular, the violation of a behavioral subgoal can be viewed as a case of cognitive dissonance such that information associated with subgoal failure is inconsistent with one's self-related beliefs (i.e., being a positive, consistent, and committed person) and beliefs regarding the importance of the endgoal, thus, resulting in dissonance (Harmon-Jones and Mills 2002). A more recent treatment of dissonance—induced hypocrisy (Fried and Aronson 1995)—helps to clarify this comparison. Within the induced hypocrisy paradigm, participants advocate a position that is beneficial to others (e.g., water consumption or condom usage) and are then reminded of times when they have failed to perform the focal behavior. The combined effect of advocacy and awareness of failure confronts the self-concept and has been demonstrated to arouse dissonance. Thus, induced hypocrisy suggests that subgoal failure would likely be perceived by a person as a transgression of important beliefs which in turn results in dissonance due to a self-hypocritical view of one's own actions. In any case, failing a sub goal is likely to generate psychological discomfort—a traditional indicator of dissonance (Elliot and Devine 1994). This conceptualization is highly compatible with the ubiquitous findings in goal literature

documenting negative affect generated in the face of failures (Cron et al. 2005; Ilies and Judge 2005). Thus, I hypothesize that:

H1: Subgoal failure increases psychological discomfort.

Dissonance reduction can occur through a variety of mechanisms including (but not limited to) changing beliefs or attitudes to align with behavior, discounting information, or changing behavior in a manner more consistent with beliefs or opinions. The success of any mode of dissonance reduction depends upon the convenience and effectiveness of the method and cognitive resistance to change (Harmon-Jones and Mills 2002). Given that people pursue multiple competing goals at any given time and their attitudes toward pursuing most of these goals are therefore generally malleable and susceptible to change (Fishbach and Dhar 2005; Soman and Cheema 2004), I therefore expect that in most subgoal failure situations people will reduce dissonance via bringing their beliefs and attitudes toward the endgoal more in line with their actual behavior. In other words, a person who fails a subgoal may simply discount, or trivialize endgoal-related cognitions and downwardly adjust future goals to be consistent with the failure. This prediction is consistent with findings related to the negative main effect of goal failure on subsequent goal setting and persistence (Ilies and Judge 2005; Shah and Kruglanski 2002; Spieker and Hinsz 2004) and the classic forced compliance studies in cognitive dissonance literature suggesting attitude change as a primary dissonance reduction mechanism after performing a counter-attitudinal behavior (Festinger and Carlsmith 1959). Downward adjustment of endgoal commitment is a convenient and effective method of dissonance reduction and as such, I expect subgoal failure to drive that result. Thus, I hypothesize:

H2: Subgoal failure decreases commitment to the corresponding endgoal.

While the majority of prior research investigates the relationship between goal-related variables at the same level of the goal hierarchy, theory suggests that goals should be evaluated in a hierarchical manner, whereby subgoals and endgoals interact with each other (Austin and Vancouver 1996; Bagozzi and Dholakia 1999). I integrate this perspective in my work by focusing on the effects of subgoal performance on endgoal commitment and indirectly on subsequent subgoal setting. Accordingly, my conceptual model (Figure 3.1) predicts that subsequent subgoals will be adjusted via a change in endgoal commitment; I consider this an "indirect effect." Drawing on the properties of the goal systems theory (see Kruglanski et al. 2002, for a detailed discussion), I suggest that this indirect effect may take the form of proximal or distal mediation depending on the association strength between subgoals serving the same endgoal. In particular, I propose proximal mediation effects of endgoal commitment where initially failed subgoal and the newly set subgoal are conceptually close and have a direct relationship and distal mediation effects where the two subgoals are conceptually remote such that the direct relationship between them is too small to detect (Shrout and Bolger 2002). I hypothesize:

> **H3**: Subgoal failure indirectly decreases subsequent subgoal setting through endgoal commitment.

To this point, I have discussed one potential way of dissonance reduction that essentially involves changing one of the dissonant cognitions. In particular, I propose that dissonance generated by subgoal failure may be reduced by bringing endgoal-related beliefs in line with the actual behavior of having failed a subgoal, which accounts for the detrimental effects of subgoal

failure on subsequent endgoal pursuit. However, it is well known that whether a particular cognition will change to reduce dissonance will depend on that cognition's resistance to change (Festinger 1957; Harmon-Jones and Mills 2002). Now I would like to investigate certain conditions under which endgoal-related cognitions should be rather resistant to change, thus, necessitating the use of alternative ways for reducing dissonance. In particular, I propose three important variables (Figure 3.1) which are expected to reduce the negative effect of subgoal failures on subsequent goal pursuit by influencing the choice of dissonance reduction mechanism.

Endgoal Specificity

Cognitions that are well-specified, elaborated on and accessible are known to be strong and resistant to change (Fazio, Powell, and Williams 1989; Petty, Unnava, and Strathman 1991). Similarly, I expect that cognitions related to endgoals that are specific rather than abstract and ambiguous should be resistant to change. Specific endgoals are more easily visualized and their desired consequences are more clear and salient than "do-your-best" goals which are graded in nature and do not promise a concrete end-state to strive for (Austin and Vancouver 1996; Cochran and Tesser 1996). For similar reasons, it has been shown that people perform better on the pursuit of specific endgoals than that of vague endgoals (Locke and Latham 1990). Accordingly, when people fail a subgoal toward a specific endgoal, the desirability of the outcomes associated with the achievement of the endgoal and the increased possibility of not attaining these outcomes becomes very salient in their mind. In such situations, it is unlikely that they will be able to reduce dissonance by downgrading the endgoal pursuit and adjusting their endgoal commitment lower in order to make these cognitions consistent with the subgoal failure (Mills 2002). An alternative way for dissonance reduction should be preferred instead of trying

to change these resistant cognitions.

Dissonance may be reduced by changing dissonant cognitions, adding consonant cognitions, or re-weighing the importance of dissonant or consonant cognitions (Festinger 1957). When endgoal-related cognitions are resistant to change, people experiencing a subgoal failure may instead increase the importance of the endgoal, downgrade the relative importance of the subgoal failure, and reduce dissonance by bringing their behavioral cognitions and future behaviors more in line with the ongoing endgoal pursuit. In other words, instead of acknowledging the failure and accepting the possibility of not attaining the specific, desirable outcomes, they would confirm their endgoal commitment further and downplay the role of the failure in endgoal attainment.

Soman and Cheema (2004) show that people violating an all-or-nothing type of savings goal, where the subgoal is of focal interest and no endgoal is specified, are likely to engage in additional spending further violating the savings goal; this finding is in line with the reasoning outlined above. Since there is no specific endgoal to be attained by achieving the subgoal and no desirable outcomes associated with goal achievement are salient, the cognitions related to the savings goal are not very resistant to change. Therefore, the primary dissonance reduction strategy would be to change attitudes toward endgoal attainment by reducing level of commitment. Such effects would not be expected in the presence of a salient specific endgoal if the earlier savings goal were a subgoal helping to achieve a specific, long-term endgoal. Accordingly, I propose the following hypothesis:

> **H4**: Endgoal specificity alleviates the negative main effect of subgoal failure on endgoal commitment.

Self-Concept and Self-Concordance of an Endgoal

Prior research on academic goals and experimental tasks demonstrates that after having failed a subgoal (e.g., an exam or an anagram solving exercise), people with high self-esteem are more likely to persist in goal-directed behavior in order to confirm their positive self-view, whereas those low in self-esteem are more likely to suspend goal pursuit because failure at a task is consistent with their self-view (Kernis et al. 1989). Goals that do not require specialized skills or competence, such as welfare-enhancing consumer goals (e.g., recycling or saving a potion of the monthly income—a focus of the current research), are not expected to be influenced by self esteem per se. Rather, what matters is the extent to which the goal is incorporated as part of one's self-concept via identification or internalization. Consistent with my dissonance-based model, the closer a person embraces a goal as part of the self-concept, the more likely that the endgoal-related cognitions will be resistant to change after experiencing a subgoal failure. In particular, Aronson (1968) holds that dissonance occurs in situations where inconsistency arises between the meaning of a behavior and one's self-concept and thus dissonance reduction requires self-justification. This self-consistency version of dissonance assumes that most people have a positive self-view and hence, experience dissonance upon acting in what they view to be an incompetent, immoral, or irrational manner.

For the purpose of this research, I use s*elf-concordance* of an endgoal to conceptualize the link between the self-concept and an endgoal, which is defined as "the degree to which stated goals express enduring interests and values" (Sheldon and Elliot 1999). Self-concordance of welfare-enhancing consumer goals should show effects analogous to those of self-esteem in the context of academic goals. In particular, when an endgoal has high self-concordance, the likely response to subgoal failure will be self-justification via further confirming commitment to the

endgoal and decreasing the relative importance of the subgoal failure with regards to endgoal achievement. On the other hand, if the endgoal lacks self-concordance, people will be likely to respond to dissonance by discounting the importance of goal-related cognitions and downwardly adjust endgoal commitment.

> **H5**: Self-concordance of the endgoal alleviates the negative main effect of subgoal failure on endgoal commitment.

Aversive Consequences of a Subgoal Failure

Following Cooper and Fazio's (1984) new look dissonance perspective, aversive consequences of a behavior have been demonstrated to increase the magnitude of dissonance experienced (Harmon-Jones 2002; Harmon-Jones et al. 1996). This intensified state of negative arousal occurs due to inconsistencies between pre-existing attitudes and the behavior associated with aversive consequences or the consequential outcome itself (Harmon-Jones 2002). I argue that failing a subgoal causes dissonance regardless of the specific consequences of the failure; however, the presence of additional undesirable consequences related to the failure is expected to increase the importance of the cognitions causing dissonance. Once again, bringing endgoal-related cognitions in line with the actual behavior does not appear to be an effective mode of dissonance reduction since this change will not suffice to restore consistency. As the inconsistency intensifies due to the prospect of undesired outcomes of failure, people would be more likely to reduce dissonance via confirming their commitment to their initial endgoal to avoid similar aversive consequences in the future. On the other hand, when failure does not result in aversive consequences, trivialization of goal-related cognitions and downward adjustment of endgoal commitment appear to be effective as a dissonance reduction strategy.

Accordingly, I hypothesize:

> **H6:** Aversive consequences of a subgoal alleviate the negative main effect of subgoal failures on endgoal commitment.

Study 1 tests hypotheses 1, 2 and 4 in the context of consumer savings goals. Hypotheses 1, 2, 3, and 5 are explored in the Study 2 and hypotheses 2, 3, and 6 are tested in Study 3; these studies are conducted in the context of pro-environmental goals, testing my conceptual model of the effects of subgoal failures on welfare-enhancing consumer endgoals.

STUDY 1

Study 1 tests the basic premises of my dissonance-based goal framework in the context of consumer savings goals (hypotheses 1 and 2). The experiment was modeled as an extension of Soman and Cheema (study 1; 2004) as I intended to provide a theoretical explanation for their findings while introducing the endgoal specificity condition under which their findings should not hold (hypothesis 4). Our study, however, differs in several ways: First, I use a more conservative goal violation manipulation and I manipulate the specificity of the endgoal. Moreover, I assess participants' perceived level of psychological discomfort when they are informed about their subgoal performance and their commitment to a higher order savings endgoal.

Participants, Design and Procedures

Participants included business undergraduates (N = 185; 103 females) enrolled in an introductory marketing class who participated in exchange for course credit. The study used a 2 (subgoal performance: success vs. failure) x 2 (endgoal specificity: specific vs. abstract) between-

participants design. Participants received one of four scenarios representing experimental goal manipulations.

The scenario was titled "What would you do?" and was introduced with the following instructions: "On the next page, you will find a hypothetical scenario about the finances and savings decisions of an undergraduate student living on campus. We want you to read the scenario carefully and imagine yourself in the situation explained in the scenario." Participants were then asked to imagine a monthly semester income of $2,000 (reflecting the average student budget and expenditures recognized by the university administration). Students were told that their monthly non-discretionary expenses (like rent, bills, groceries, transportation, books, and supplies) were $1,200, thereby leaving $800 monthly to spend on discretionary items. The participants were also informed that they had just finished paying a loan and had some general savings. Then participants were provided the endgoal specificity manipulation with the *specific* endgoal being described as "saving for a trip to Mexico with friends in the next spring break" whereas the *abstract* endgoal was described as "saving for future." In particular, participants in the specific endgoal condition read: "At the beginning of this month, you decided to start saving some money for a trip to Mexico that you are planning to take with your friends next year at spring break before you graduate." Participants in the abstract endgoal condition read: "At the beginning of this month, you decided to start saving some money for future."

After the endgoal specificity manipulation, all participants read the following: "Of the $800 that remains after your monthly non-discretionary expenditures, you decide to save $150 this month. In other words, you would like to spend no more than $650 on discretionary expenses." The subgoal performance manipulation followed, where participants in the subgoal *success* condition read: "It is now the end of the month and you are looking over your

discretionary monthly expenses on a personal accounting program. After summing up all the expenditures that you have made this month, you realize that you have spent $600 on discretionary expenses and saved $200. That is, you have achieved your savings goal for this month." For the participants in the subgoal *failure* condition, the last two sentences were replaced with the following: "After summing up all the expenditures that you have made this month, you realize that you have spent $750 on discretionary expenses and saved $50. That is, you have failed your savings goal for this month." Complete scenarios can be found in Appendix A.

The failure manipulation was conservative as compared to Soman and Cheema (2004) in the sense that a portion of savings was still incurred but was below the standard set as a monthly savings goal. Such a conservative manipulation was selected to enhance the experimental realism of the scenario. Once the participants had completed reading the scenario, they were asked to complete a survey including the dependent measures.

Measures

Psychological discomfort was measured using the average of Elliot and Devine's (1994) three-item discomfort scale ($\alpha = .94$). Next, *endgoal commitment* was assessed with the average of the following six seven-point items (Tubbs 1993): "How committed are you to attaining this goal?", "To what extent do you feel committed to this goal?", "How likely is it that you will work your hardest for this goal?" ,"How hard will you try to reach this goal?", "How satisfied would you be if you reached your goal?", and "How attractive would it be to reach your goal?" ($\alpha = .82$). The endgoal of interest was defined as the overall savings goal that was described in the scenario.

After the dependent measures, participants completed the manipulation checks and potential control measures. For the subgoal performance manipulation, they were asked to

indicate whether they achieved or failed their monthly savings goal. For endgoal specificity, participants were asked to indicate according to the scenario the reason for which they decided to save money; their answers were dummy-coded. Following the manipulation checks, participants rated the importance of the overall savings goal on a seven-point scale; this measure aimed to assess whether specificity actually enhances the importance of dissonance-related cognitions as theorized. Lastly, participants' beliefs with regards to the realism of the scenario on a seven-point scale and their demographic information were measured.

Analysis and Results

Manipulation checks. The subgoal performance manipulation was successful with 94% of those in the success feedback condition correctly identifying that they had accomplished their savings goal and 83% of those in the failure condition correctly recognizing that they had failed their savings goal ($\chi^2(1) = 110.84$, $p < .01$). The endgoal specificity manipulation was also a success ($\chi^2(1) = 160.47$, $p < .01$), such that 94% of those in the specific endgoal condition correctly mentioned the Mexico trip as the reason to save, whereas 100% of the participants in the abstract endgoal condition failed to provide a specific reason for saving.

We conceptualized endgoal specificity as a variable influencing the importance of dissonance-generating cognitions for people experiencing subgoal failure. Thus, I expected the specificity manipulation to have a significant effect on the perceived importance of the overall savings goal. I find that specific endgoal ($M = 6.22$) was perceived to be significantly more important than the abstract endgoal ($M = 5.76$; $t(183) = 2.77$, $p < .01$), confirming my reasoning.

Finally, I examined whether the manipulations impacted participants' ratings of the scenario's perceived realism with a 2 (subgoal performance) x 2 (endgoal specificity) ANOVA. Results yielded no significant effects, thus all four scenarios were perceived similarly realistic

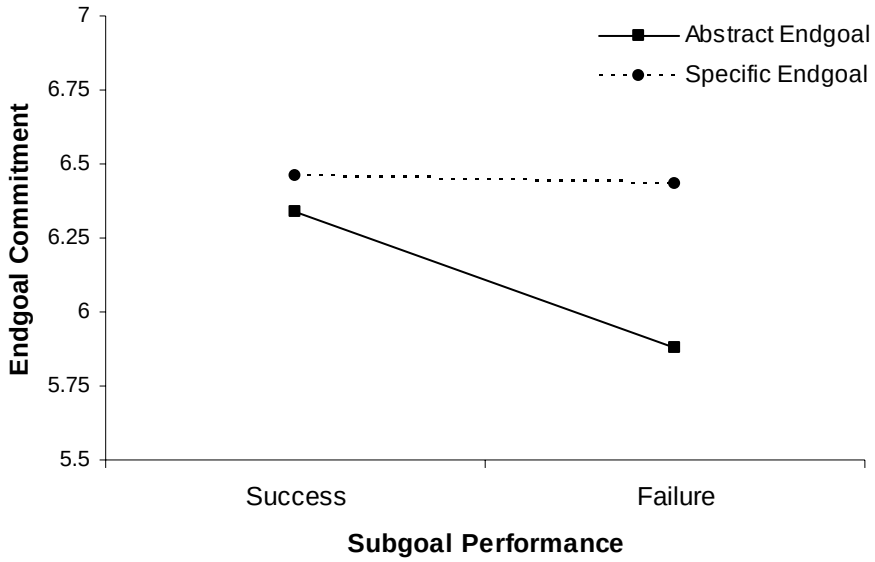
($M_{realism}$ = 5.55). This value was significantly higher than the scale midpoint ($t(184) = 13.1$; $p < .01$), further validating my manipulations. Note that perceived realism did not affect the results of the main study when treated as a covariate.

Psychological Discomfort (H1). A 2 (subgoal performance) x 2 (endgoal specificity) ANOVA on psychological discomfort was performed to test for hypothesis 1. The only significant effect in the model was the main effect of subgoal performance on psychological discomfort ($F(1, 181) = 325.06$; $p < .01$). As hypothesized, participants experienced higher levels of discomfort when they failed the savings subgoal than when they achieved it (*M*s = 4.77 vs. 1.37, respectively).

Endgoal Commitment (H2 and H4). To assess hypothesis 2 and 4, endgoal commitment was subjected to a 2 (subgoal performance) x 2 (endgoal specificity) ANOVA. In support of hypothesis 2, subgoal performance had a significant main effect on commitment ($F(1, 181) = 6.20$, $p = .01$) such that participants in the failure condition were less committed to the endgoal than those in the success condition (*M*s = 6.16 vs. 6.40 and *N*s = 86 vs. 99). Further, endgoal specificity also had a main effect on commitment ($F(1, 181) = 11.19$, $p < .01$) such that commitment was higher when the endgoal was specific, compared to abstract (*M*s = 6.44 vs. 6.13 and *N*s = 93 vs. 92). These main effects were qualified by a significant subgoal performance by endgoal specificity interaction ($F(1, 181) = 4.74$, $p = .03$). In order to understand the interaction, I examined the effect of endgoal specificity at each level of subgoal performance (Figure 3.2). In the subgoal success condition, there was no significant difference in commitment to the overall savings goal for specific and abstract endgoals (*M*s = 6.46 vs. 6.34 and *N*s = 49 vs. 50; $F(1, 181) < 1$). Upon failing the subgoal, however, participants were more committed to their savings endgoal when the endgoal specific rather than abstract (*M*s = 6.43 vs. 5.88 and *N*s = 44 vs. 42; $F(1, 181) = 14.24$, $p < .01$). These results support hypothesis 4.

FIGURE 3.2

EFFECTS OF SUBGOAL FAILURE AND ENDGOAL SPECIFICITY
ON ENDGOAL COMMITMENT (Study 1)



Discussion

Results of study 1 provide preliminary support for our dissonance-based subgoal failure framework in the setting of saving goals. Building on the work of Soman and Cheema (2004) who show that behavioral failures may have detrimental effects on subsequent performance, we show that these detrimental effects extend to overall commitment to a higher order endgoal. Importantly, this study demonstrates that people who experience a subgoal failure (vs. success) experienced higher levels of psychological discomfort immediately after exposure to the manipulation, and a corresponding reduction in commitment to the endgoal. Our theoretical interpretation is that the discomfort serves as a source of motivation to reduce a state of negative arousal which in turn diverts

attention away from goal pursuit and reduces commitment to the endgoal. Importantly, we show that endgoal specificity is a boundary condition for observed effects such that people striving for a specific endgoal remain significantly more committed to their endgoal after having failed a subgoal, than those striving for an abstract endgoal. Moreover, their level of commitment is not different from those who accomplish their subgoals, implying that this effect can be regarded as "motivating" rather than merely "not demotivating."

One might argue that the results obtained in this study can be attributed to the perceived proximity of the endgoal, rather than its specificity. Research on the goal-gradient effect suggests that as goal attainment draws nearer, people should become more persistent in their efforts (e.g., Kivetz, Urminsky, & Zheng, 2006). Thus, if attainment of the specific endgoal was perceived by our participants to be more proximal than that of the abstract endgoal, then they might have persisted more in the face of failure due to this difference in perceived proximity. This alternate account is implausible for at least two reasons. First, if the goal-gradient effect were driving our findings, I would expect to find a significant difference between commitment to the "proximal" (i.e., specific) and the "distal" (i.e., abstract) endgoals within the success condition, but that difference is non-significant in this study. Second, I ran a follow-up study ($N = 93$), where I revised the savings scenario so as to manipulate endgoal proximity directly. In this study, I manipulated the proximity of the endgoal, which was the same as that used in study 1 (i.e., a trip to Mexico in spring break). In the proximal condition, participants read that they had failed their monthly savings subgoal one month prior to spring break, whereas in distal condition failure took place eight months prior to break; I only used the failure condition in this study. If the results of study 1 were driven by endgoal proximity, I would expect to find a significant difference in the level of endgoal commitment between the proximal and distal conditions. I found, however, that participants were similarly committed to the

endgoal whether it was proximal or distal (M = 5.76 vs. 5.89 and N = 48 vs. 45, respectively), ($F(1, 91) < 1$). Thus, I am confident in our conclusion that specificity of the endgoal—and not the goal-gradient effect—accounts for the high levels of commitment after the failure in study 1.

In study 1, I employed a hypothetical scenario, which required participants to imagine failing (or attaining) a monthly savings goal and to complete dependent measures according to this hypothetical setting. Although many studies in the literature have used this approach and perceived realism of the scenario did not influence the results, a more realistic subgoal performance manipulation is used in study 2 to help establish the external validity of this dissonance-based goal framework. To further my efforts at establishing the generalizability of the effect, I also examine a new consumer goal in the second study. Finally, study 1 only tested the direct effects of subgoal failures; study 2 will explore whether these effects extend to subsequent subgoal setting via commitment to the endgoal, as suggested by the hierarchical structure of goals.

STUDY 2

Study 2 tests the dissonance-based goal framework (hypotheses 1 and 2) with a new domain of consumer goals (pro-environmental consumption) using a real subgoal failure. In addition, I examine the indirect effects of subgoal failure on subsequent subgoal setting (hypothesis 3) and the effects of a new moderator, namely self concordance of the endgoal (hypothesis 5).

Participants, Design and Procedures

The sample included business undergraduates from an introductory marketing class (N = 106; 37 females) who participated in exchange for course credit. Participants were randomly assigned to success or failure feedback conditions; self-concordance with the endgoal was a measured variable and treated continuously in the analysis.

The focus of study 2 is upon goals associated with pro-environmental consumption. The choice of this setting is based on two factors. First, consumers rarely set themselves specific endgoals regarding pro-environmental consumption and rather tend to pursue the elusive idea of environmental consciousness by taking up more specific subgoals such as recycling, conserving energy, and driving less. As such, pro-environmental goals serve as an appropriate context to study subgoal failures in the pursuit of abstract endgoals. Second, the results of an exploratory survey ($N = 453$) drawn from the same population of college students as the main study sample showed that respondents actively pursued pro-environmental goals. In particular, respondents listed all goals pursued in their daily lives related to their wellbeing or that of society; of 1,378 goals listed, pro-environmental goals (24.3%) were the most frequently cited. The subgoal for study 2 was conceptualized as "being knowledgeable about current environmental issues and practices." This subgoal is operationalized as individual performance on an environmental IQ test (see details subsequently on the development of the test). The endgoal in this study was conceptualized as "the goal of helping to create a healthy, clean, and sustainable environment" and used as the definition for my primary dependent variable, endgoal commitment.

The major challenge in designing this study was to create a credible environmental IQ test that provides the basis for an effective subgoal performance manipulation. Initially, I formed a question bank containing over 200 questions regarding environmental issues and then reduced it to a set of 30 plausible and practically relevant questions. I ran two pretests to test the credibility and effectiveness of the stimulus. Based on the first pretest, a final Environmental IQ Test (EIQT hereafter) was formed consisting of 20 multiple choice questions of moderate

difficulty.[1] In the second pretest, I established that the failure feedback on the EIQT leads to significantly greater psychological discomfort, lower satisfaction with the EIQT performance, and lower evaluation of test scores than the success feedback.

Approximately six weeks before the study, self-concordance, self-esteem, attitudes toward the environment, and demographics were collected via an online survey. The main study took place in a computer lab in 30-minute sessions with groups of 10 participants maximum. At the start of each session, participants read a letter from the College of Business asking for their participation in an Environmental IQ Test (EIQT). Next, they received test instructions, the 20-question EIQT, and a regular scantron sheet to record responses. Based on a pretest, participants were allowed 7 minutes to complete the test. At the end of the allotted time, scantron sheets were collected. During an unrelated computer survey, the experimenter left the room with the scantron sheets and in five minutes came back with printed EIQT score cards. Score cards had been prepared before the session and were designed to resemble the regular output from university's information technology center. The score card included each participant's last name, ID number, raw and percent score, as well as a brief description for the meaning of the score. A pretest confirmed that the score card looked credible and realistic.

In the success (failure) condition, the score card reported the participant's performance as excellent (poor) with 90% (15%) success rate and indicated a high (marginal) propensity to positively impact the environment. Participants were given one minute to view the results; afterwards they electronically completed endgoal commitment and psychological discomfort measures. After a series of filler tasks, the subgoal setting measure was collected. Lastly, they

[1] The final EIQT included questions such as "Which part of a typical American home has the highest water usage?" and "Which of the following does not increase greenhouse gases?" First pretest confirmed the suitability of the EIQT for a feedback manipulation as participants' actual EIQT scores did not correlate with the perceived difficulty or reliability measures, giving us extra confidence that my subgoal performance manipulation will not be confounded by participants' actual performance.

completed manipulation and open-ended demand checks. Appendix B contains complete list of EIQT instructions, questions, and feedback materials.

Measures

Pre-experimental *attitudes toward the environment* were measured by three seven-point semantic differentials anchored at "bad/good," "unfavorable/favorable," and "negative/positive" (α = .95). *Self-esteem* was measured by Rosenberg's (1965) 10-item self-esteem scale (α = .90). *Self-concordance* of the endgoal is operationally defined as the degree to which participants pursue the goal of creating a healthy, clean, and sustainable environment due to an intrinsic interest and identity congruence rather than feelings of guilt or shame and social pressures. Self-concordance was measured via Sheldon and Elliot's (1999) four nine-point items assessing external ("I strive for this goal because somebody else wants me to, or because the situation seems to compel it."), introjected (" I strive for this goal because I would feel ashamed, guilty, or anxious if I didn't."), identified ("I strive for this goal because I really believe that it's an important goal to have."), and intrinsic ("I strive for this goal because of the fun or enjoyment it provides me.") reasons for pursuing the stated endgoal anchored at "Not at all for this reason" and "Completely for this reason." A self-concordance index was calculated by summing the identified and intrinsic scores and subtracting the introjected and external scores as per Sheldon and Elliot's (1999) recommendation.

Psychological discomfort was measured by the same three-item discomfort scale used in study 1 (α = .77). *Endgoal commitment* was measured by the same six seven-point items used in study 1 (α = .91) with the only difference being the endgoal description. *Subsequent subgoal setting* was operationalized in terms of total number of hours participants would be willing to allocate to recycling and pro-environmental volunteering activities to be organized during an

upcoming "Environmental Awareness Week" (see Appendix C).

Results and Analysis

Manipulation Check. All participants correctly identified their EIQT score as either excellent or poor in correspondence with their actual conditions. Based on a manipulation strength index (i.e., average of four items assessing participants' overall evaluation of their EIQT performance and feelings about their EIQT scores; $\alpha = .98$) participants in the success condition believed that they were significantly more successful on the EIQT than those in the failure condition (Ms = 6.45 vs. 1.89 and Ns = 46 vs. 60; $t(104) = 26.49$, $p < .01$).[2]

Psychological Discomfort (H1). Participants in the subgoal failure condition reported higher levels of discomfort than those in the subgoal success condition (Ms =3.09 vs. 2.38; $t(104) = 2.73$, $p < .01$), confirming hypothesis 1. A follow-up ANCOVA with self-esteem as a covariate shows that self-esteem had a significant negative effect on discomfort ($F(1, 103) = 13.42$, $p < .01$), however, the feedback effect remained significant ($F(1, 103) = 6.36$, $p = .01$).

Endgoal Commitment (H2 and H5). There was a significant effect of subgoal performance feedback on endgoal commitment ($t(104) = 2.09$, $p = .04$). In support of hypothesis 2, participants in the subgoal failure condition were significantly less committed to the endgoal than those in the success condition (Ms = 4.66 vs. 5.10). An ANCOVA with pre-experimental attitudes toward the environment as a covariate also yielded a main effect of manipulation ($F(1, 103) = 3.85$, $p = .05$), showing that the effect of subgoal performance on endgoal commitment is beyond what can be explained by participants' existing attitudes toward the environment.

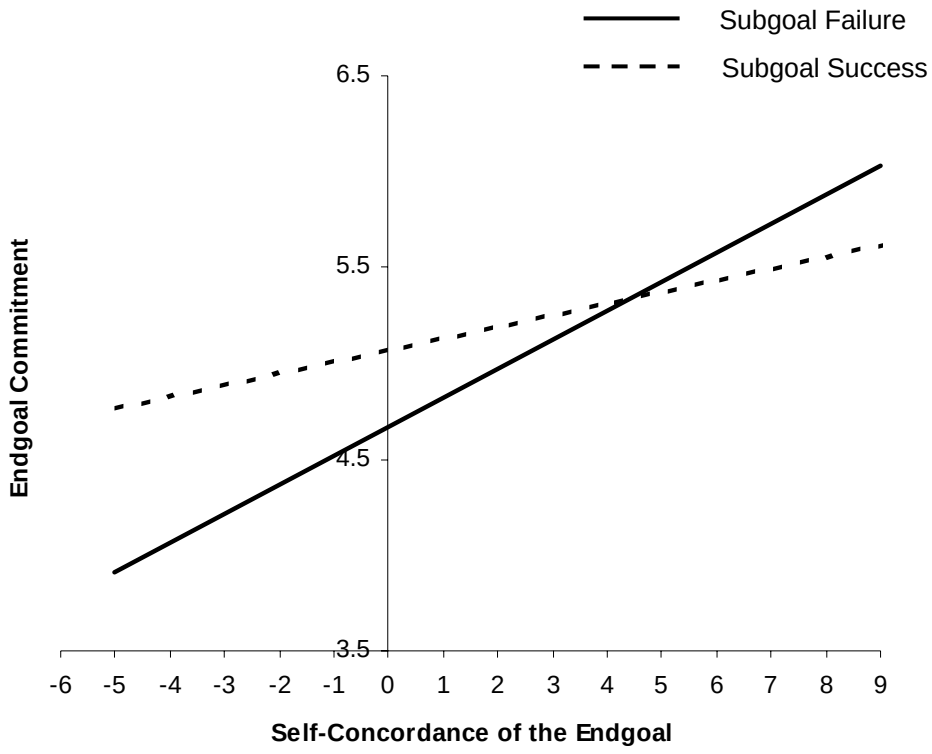
Self-concordance of the endgoal was expected to have a positive effect on endgoal commitment for participants receiving failure feedback (H5). A regression model was fit for the

[2] Since we randomly assigned the participants to conditions prior to the study based on the sign-up list, we ended up having unequal cell sizes due the distribution of the participants not showing up at the time of the study.

failure condition only, wherein goal commitment was regressed on self-concordance (Figure 3). In support of hypothesis 5, the effect of self-concordance on goal commitment was positive and significant in the failure condition (b = .45, $F(1, 58) = 14.79$, $p < .01$, R^2 = .20). Even when it was included in the model after attitudes toward the environment (b = .34, $t(56) = 2.91$, $p < .01$) and self-esteem (b = -.01, $t(56) = -.07$, $p > .9$), self-concordance was significant and explained variation in the model (b = .37, $t(56) = 3.18$, $p < .01$, ΔR^2 = .13, adjusted R^2 for the model = .27).

FIGURE 3.3

EFFECTS OF SUBGOAL FAILURE AND SELF-CONCORDANCE ON ENDGOAL COMMITMENT (Study 2)



Although no hypotheses were made for the effects of self-concordance in the success condition, the same analyses were repeated for this group of participants (Figure 3.3). The effect

of self-concordance on goal commitment was not significant for the success group (b = .22, F(1, 44) = 2.21, p > .1) and the null effect did not change (b = .14, t(42) < 1) when self-concordance was included after attitudes toward the environment (b = .32, t(42) = 2.21, p = .03) and self-esteem (b = .13, t(42) < 1). As figure 3 suggests, as self-concordance of the endgoal increases, people failing a subgoal become at least as committed to the endgoal as those who have achieved the endgoal. In other words, failure motivates high self-concordance people as much as success does in general whereas it demotivates those having low self-concordance with the goal.

Subsequent subgoal setting (H3). Subgoal performance is expected to have an indirect effect on subsequent subgoal setting through endgoal commitment (H3). This effect is expected to have the form of a distal mediation since taking the EIQT and participating in sustainability-related activities on campus were removed in time during the study and are conceptually remote, therefore, the regular mediation analysis (Baron and Kenny 1986) would not be appropriate (Shrout and Bolger 2002). In order to estimate the indirect effect and calculate a 95% confidence interval around the estimated mean, a bootstrap approach was employed (Preacher and Hayes 2004; Shrout and Bolger 2002). This form of estimation is conceptually equivalent to Sobel's large sample test, but can be applied to small-to-moderate sample sizes. Based on 3,000 bootstrap samples, the estimate of the indirect effect was positive and significant (b = .56, with 95% confidence limits given by .02 and 1.35), in support of hypothesis 3.

Discussion

Results from the second study provide support for my subgoal failure model in the context of pro-environmental goals. Specifically, participants who received negative feedback on an environmental IQ test adjusted their commitment to the environment downward as compared to those receiving positive feedback, a finding consistent with the bulk of goal performance

literature. Further, I again showed that subgoal failure caused heightened levels of psychological discomfort immediately following manipulation, which I interpreted as a manifestation of cognitive dissonance. Consistent with the hierarchical treatment of goals, I found that the negative effect of subgoal failure transferred to subsequent subgoal setting only indirectly, via an adjustment of commitment to the endgoal. Interestingly, I showed that participants, for whom the goal of contributing to a healthy and clean environment was part of their self-concept, reacted to negative feedback by confirming their commitment to this endgoal. In other words, failure did not have a detrimental effect on goal pursuit for these people. I also ruled out a possible alternative account, demonstrating that trait self-esteem and attitudes toward the environment were not responsible for these findings.

While the second study provides solid evidence for my theoretical framework, there are some remaining issues to address in a subsequent study. First, although I limited the amount of time allocated to completing the EIQT, I could not control for the individual differences in test completion times. It is not unreasonable to argue that such time differences may have affected the results of my study. A second is that three participants suspected the authenticity of their test scores, implying that the exceedingly low feedback scores in the failure condition might have raised some concerns as to the EIQT's credibility.

Apart from these procedural considerations, a number of conceptual issues remain. First, although often used in the goal literature, success feedback does not provide the best control condition to demonstrate absolute effects of subgoal failure. In particular, I do not know whether failure feedback leads to an absolute decrease in endgoal commitment or only an effect relative to subgoal success. Second, even though I showed that trait self-esteem did not influence the effects of subgoal failure, I did not rule out a potential alternative process whereby failure may

influence endgoal commitment through decreased state self-esteem and not dissonance. Third, one could argue that the indirect effect of subgoal performance on subsequent subgoal setting only indicates a general carryover effect of negative arousal associated with failure feedback and it is not a manifestation of the hierarchical relationship between subgoals and an endgoal. Lastly, studies 1 and 2 provide empirical evidence for dissonance increase as a result of subgoal failures; however, in order to completely support my dissonance-based framework, further process evidence is needed to demonstrate dissonance reduction after adjusting endgoal commitment. Study 3 addresses these considerations.

STUDY 3

Pro-environmental goals were the focus of the third study, following a design similar to that of study 2 while addressing the previously noted issues. Two major objectives of this experiment were to replicate the negative main effect of subgoal failures on endgoal commitment and subgoal performance compared to a true control condition (hypotheses 2 and 3) and to test the effect of aversive consequences of failure as a boundary condition (hypothesis 6). I also wanted to provide tri-fold process evidence for our proposed dissonance-based theoretical framework by directly testing for dissonance reduction, by ruling out changes in state self-esteem after receiving performance feedback, and by measuring the effects of failure on trivialization of goal-related cognitions.

Participants, Design and Procedure

The sample included undergraduate business students (N = 354; 162 females) enrolled in a marketing class who participated for course credit. Study 3 used a one-way (control vs. regular failure vs. failure with aversive consequences) between-participants design.

This experiment differs from the second in several ways. First, I created electronic versions of the EIQT and score cards using MediaLab software. Participants' EIQT completion times were recorded for use as a potential covariate and served as a proxy for task involvement. Second, test scores in the failure condition were increased to 35% (seven correct answers out of 20), in order to enhance their believability. Participants were informed this was a failing score and given the same explanation as in the second study. Third, study 3 used a no-feedback control condition (instead of a success condition) in order to observe the absolute, instead of relative, effects of failure. This condition was identical to the failure conditions except for the absence of test performance feedback. This type of control condition provides a conservative test for my framework since not receiving feedback may lead to frustration which might have comparable effects to subgoal failure. Finally, the content and order of process and subgoal setting measures were different to allow a more extensive theoretical test.

The manipulation of the aversive consequences was based on typical aversive consequences studies reported in the literature (Scher and Cooper 1989). In particular, participants received a letter from university administration at the beginning of the study. In the letter, the headline from a recent issue of the campus newspaper was provided that talked about the university receiving a grade of "C" for its green practices by the Sustainable Endowments Institute. In the aversive consequences condition, participants then read that the university administration had requested an upgraded sustainability score. As part of this process, university students were asked to complete an Environmental IQ Test by the Sustainable Endowments Institute, since the awareness of environmental issues plays an important role in the score. Further, participants were told that their scores could influence the upgrade of the university's sustainability score and if the low score cannot be changed as a result of this process, student

tuition and mandatory fees would need to be increased to compensate for the loss of federal and state funding. In the regular failure (i.e., no aversive consequences) and control conditions, participants read a similar letter and were told that university administration requested a sample of students to take this test as an internal assessment of the causes for the low sustainability score (see Appendix D). No negative consequences of poor EIQT performance were mentioned in the letter.

The procedures for the current study were similar to those of study 2. Self-esteem and demographics were collected from the participants via an online survey approximately one month before the main study, which took place in a computer lab. At the start of the research session, participants read a letter from the university administration which included the aversive consequences manipulation and an introduction to the EIQT. After completing the electronic version of the 20-question EIQT, participants were directed to a new page that either displayed their manipulated EIQT score in both failure conditions or asked to indicate whether they would like their EIQT scores sent to their email address in the control condition. After this page, participants completed endgoal commitment, subsequent goal setting, self-esteem, trivialization, psychological discomfort, and manipulation checks.

Measures

Both trait and state *self-esteem* were measured by Rosenberg's (1965) self-esteem scale ($\alpha = .89$ for pre-experimental assessment and $\alpha = .87$ for post-manipulation assessment). *Endgoal commitment* was measured by the same items as in studies 1 and 2 on a nine-point scale ($\alpha = .94$). *Subsequent subgoal setting* was separated from the EIQT using a different cover story. In particular, participants were told that in the upcoming research session for which they had registered that there would be a verbal learning task comprised of a tutorial and test (see

Appendix E). They were also told that to make the task more interesting they would be allowed to select a topic that is personally appealing. Participants were given four topics and asked to indicate the degree to which they found each topic appealing on a nine-point scale anchored by "Not appealing" and "Very appealing." Two goal-relevant (i.e., recycling and energy conservation) and two goal-irrelevant topics (i.e., healthy eating and helping others) were available. Participants were told that they would receive the task which they rated most highly.

Trivialization of goal-related cognitions was measured by 3 items adapted from Simon, Greenberg, and Brehm (Study 1, 1995) and assessed the perceived significance of environmental awareness, the EIQT performance, and the college sustainability score on a 9-point scale (α = .69). Lower scores on this measure indicate higher levels of trivialization. *Psychological discomfort* was measured *after* the dependent variables in study 3 (rather than before as in studies 1 and 2) using the same three-item discomfort scale as that of studies 1 and 2 (α = .83).

Manipulation checks included participants' evaluation of their EIQT performance using two seven-point semantic differential items, anchored at "Very bad/Very good" and "Not successful at all/Very successful"(α = .96). The aversive consequences manipulation was assessed by asking participants in both failure conditions to indicate the likelihood that a poor test score will have undesirable consequences on a nine-point scale anchored at "Very unlikely" and "Very likely."

Results and Analysis

Manipulation Checks. Participants receiving failure feedback (i.e., both failure conditions combined) evaluated their performance more negatively than those in the control condition (Ms = 2.42 vs. 5.17; $F(1, 351) = 239.7$, $p < .01$). Within failure feedback conditions, the performance evaluations in the aversive consequences condition did not differ from those of

regular failure condition (*M*s = 2.49 vs. 2.35; $F(1, 351) < 1$), indicating that failure was successfully and similarly manipulated in both conditions. Regarding aversive consequences, participants in the failure with aversive consequences condition found it significantly more likely that a poor EIQT score will have undesirable consequences than those in the regular failure condition (*M*s = 5.05 vs. 4.45; $F(1, 351) = 12.29$, $p < .01$). Also, none of the participants raised a suspicion as to the authenticity of the performance feedback they received on the EIQT.

Endgoal Commitment (H2 and H6). Due to the particular design of study 3 (i.e., two failure conditions and a control), I used planned contrasts to test hypotheses. A simple contrast analysis was conducted to test for the main effect of failure (vs. control) on endgoal commitment. Participants in the regular failure condition showed lower commitment to the endgoal than those in the control condition (*M*s = 5.84 vs. 6.31; *N*s = 123 vs. 117; $F(1, 351) = 5.5$, $p = .02$), in support of hypothesis 2. When I contrasted endgoal commitment of both failure conditions to that of the control condition, results were similar; participants receiving failure feedback were less committed to the endgoal of helping to create a healthy, clean, and sustainable environment ($M = 5.98$) than control group ($F(1, 351) = 3.7$, $p = .055$). When the effect of participants' task involvement was controlled for, using EIQT completion time as a proxy, the effect of subgoal performance on goal commitment became even stronger.[3]

Hypothesis 6 predicts that the negative main effect subgoal failure on endgoal commitment will be alleviated in the presence of aversive consequences. A contrast analysis shows endgoal commitment did not differ between the failure with aversive consequences condition ($N = 114$) and the control condition (*M*s = 6.11 vs. 6.31; $F(1, 351) = 1$, $p = .32$). Thus, aversive consequences of failing a subgoal appear to constitute a boundary condition for the

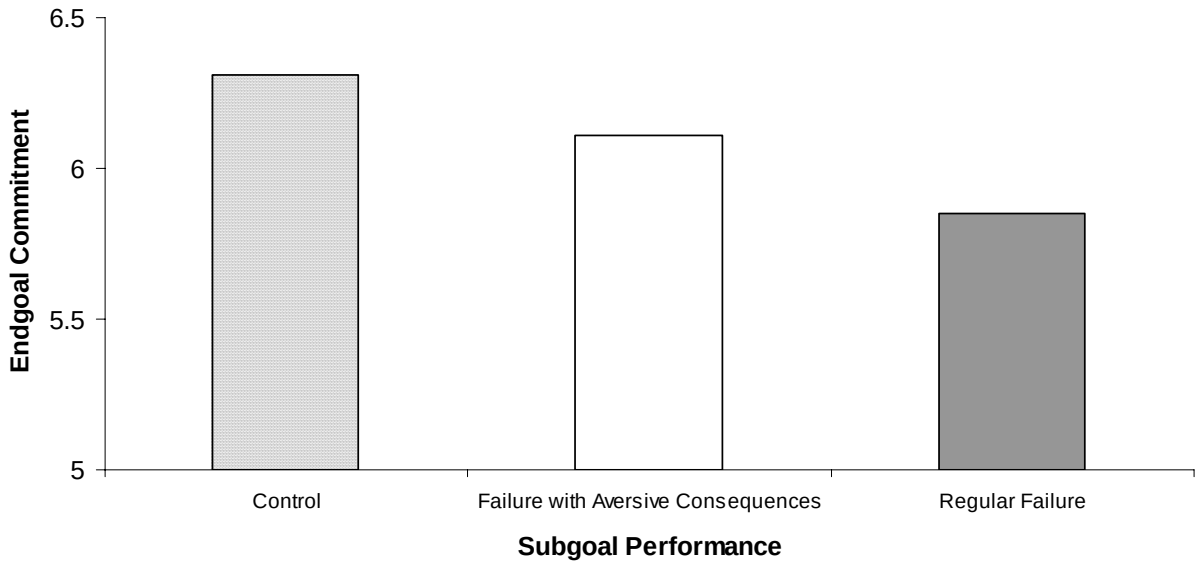
[3] Contrast of control vs. regular failure: $M = 6.34$ vs. 5.85; $F(1, 347) = 5.88$, $p = .02$; contrast of control vs. failure: $M = 6.34$ vs. 5.98; $F(1, 347) = 4.33$, $p = .04$; the effect of completion time as a covariate: $F(1, 347) = 3.10$, $p = .08$.

negative effects on goal commitment, in support for hypothesis 6 (see Figure 3.4). These results did not change even when the EIQT completion times were controlled for in the analysis.

To show that these findings are not attributable to changes in self-esteem due to failure feedback, I calculated a difference score between pre and post self-esteem scores. Contrast analyses between the control condition and regular failure condition, as well as the control condition and both failure conditions combined, indicated non-significant effects on self-esteem change (both *F*s(1, 351) < 1). Furthermore, including the self-esteem difference score in the previous analyses on end goal commitment did not change any results; neither did self-esteem interact with subgoal performance.

FIGURE 3.4

EFFECTS OF SUBGOAL FAILURE WITH AND WITHOUT AVERSIVE CONSEQUENCES ON ENDGOAL COMMITMENT (Study 3)



Subsequent subgoal setting (H3). To test the indirect effect of failure on subsequent goal

setting, I formed an index score averaging the preference ratings for both goal-relevant activities (i.e., recycling and energy conservation; α = .75). To estimate the indirect effect, I dummy-coded subgoal performance with control group as 0 and regular failure condition as 1 and estimated the indirect effect based on 3,000 bootstrap samples of size $N = 240$. The estimate of the indirect effect was $b = -.15$ with 95% confidence interval limits given by -.28 and -.02. Therefore, the indirect effect of failure on subsequent goal setting via endgoal commitment was negative and significant, confirming hypothesis 3. This result did not change when I ran the analyses separately for recycling and energy conservation ratings.

In order to show that the above demonstrated indirect effects of failure are specific to the hierarchical relationship between an endgoal and subgoals serving that endgoal, I ran the bootstrap estimation on the ratings of the two goal-irrelevant topics (i.e., healthy eating and helping others). The indirect effect was non-significant for both cases ($b_{HE} = -.01$, 95% CI = (-.05, .03); $b_{HO} = -.04$, 95% CI = (-.11, .01)).

Trivializaton. I expected that among participants receiving failure feedback, those in the aversive consequences condition would be less likely to trivialize goal-related cognitions than those in the regular failure condition. The results of a contrast analysis confirm this prediction. In the absence of aversive consequences of failing a subgoal, participants evaluated goal-related cognitions as less significant $M = 5.35$) than when aversive consequences were present ($M = 5.89$; $F(1, 351) = 6.04$, $p = .01$). In line with my theorizing, the presence of aversive consequences appears to have made it more difficult for participants to trivialize their goal-related cognitions, thus rendering the confirmation of goal commitment a more preferable method of dissonance reduction.

Moreover, to test the indirect effect of aversive consequences of failure on goal

commitment via trivialization of goal-related cognitions, I dummy-coded two failure conditions with regular failure as 0 and failure with aversive consequences condition as 1 and estimated the indirect effect based on 3,000 bootstrap samples of size $N = 237$. The estimate of the indirect effect was $b = .25$ with 95% confidence interval limits given by .05 and .47. Therefore, the indirect effect of aversive consequences on goal commitment via perceived significance of goal-related cognitions was positive and significant (Note that high scores on this measure indicate higher perceived importance of goal-related cognitions).

Psychological Discomfort. There was no main effect of experimental manipulations on psychological discomfort (after the manipulation and measurement of the dependent variables) ($F(2, 351) = 1.24$, $p = .29$). Participants in the regular failure condition ($M = 2.46$), failure with aversive consequences condition ($M = 2.74$), and control condition ($M = 2.59$) reported similar levels of discomfort, indicating that those in the failure conditions were able to reduce dissonance via adjusting their endgoal commitment.

Discussion

An important distinction of study 3 from studies 1 and 2 regards psychological discomfort; it was measured before the dependent variables in the first two studies, but after the dependent variables in study 3. Therefore, I predicted (and found) an effect of failure on discomfort as a manifestation of dissonance in studies 1 and 2. However, in study 3, according to theory, I would not expect to find an effect of failure on psychological discomfort because the dependent variables of endgoal commitment and subsequent subgoal setting have already provided a means to reduce dissonance by the time discomfort was measured. Such was the case.

Findings from this study on the negative direct and indirect effects of subgoal failure on endgoal commitment and subgoal setting, respectively, not only replicate the findings of studies

1 and 2, but also contribute to our understanding of the absolute direction of the effect. By using a non-feedback control group, I demonstrate that failure in fact has a demotivating effect on endgoal pursuit. I also provide support for the hierarchical treatment of goals, showing that indirect effects of failure are specific to intentions to perform endgoal-related behaviors and do not extend to activities that are not related to the focal endgoal.

I also see that aversive consequences of the subgoal serve as a boundary condition for the negative effect of subgoal failure on endgoal commitment (Cooper & Fazio, 1984). Specifically, I find that when subgoal failure brings about unwanted consequences, people do not trivialize their goal-related cognitions and instead, confirm their commitment to the endgoal to restore consistency among cognitions. In a sense, aversive consequences of failure appear to have similar effects to endgoal specificity and self-concordance, in that all three variables alleviate the negative effects of failing a subgoal.

One might argue that trivialization of subgoals and endgoals should be a mediating mechanism; I expected that the presence of aversive consequences would have made it more difficult to trivialize goal-related cognitions after a failure, thus rendering the confirmation of goal commitment a more preferable method of dissonance reduction. The results of contrast and indirect effect analyses confirmed this prediction. In line with my theorizing, in the absence of undesirable consequences, people who experience a failure tend to trivialize their goal-related cognitions thereby reducing their commitment to this endgoal. On the other hand, when failure is accompanied by aversive consequences, goal-related cognitions retain their importance, motivating people to preserve their commitment to the endgoal.

Finally, the results of this study demonstrate that self-esteem as measured by the Rosenberg scale does not account for the negative effect of subgoal failure. As noted earlier,

findings regarding the effects of self-esteem in goal pursuit may be an artifact of the experimental contexts frequently seen in the literature (e.g., analytic tasks and academic goals). The pursuit of welfare-enhancing goals such as those of the current research does not appear to be influenced by self-esteem.

GENERAL DISCUSSION

A considerable body of literature has documented the negative effect of subgoal failures on subsequent goal pursuit (mostly as compared to subgoal achievement). I propose a unifying theoretical framework based on cognitive dissonance to explain this negative main effect and present supporting evidence in the context of welfare-enhancing consumer goals. Importantly, I treat these socially normative consumer goals in a hierarchical manner and investigate the effects of behavioral failures at the subgoal level on the pursuit of large-scale, higher-order endgoals and the intentions to perform other behaviors serving the endgoal.

Study 1 demonstrates that failing (as compared to achieving) a monthly savings goal increased psychological discomfort and decreased commitment to a long-term savings endgoal. Consistent with findings of study 1, in study 2 I show that participants receiving failure feedback regarding an environmental IQ test reported lower levels of commitment to the environment and higher levels of psychological discomfort than did participants receiving success feedback. In study 3, consistent with theory, participants having had opportunity to alleviate psychological discomfort by responding to dependent variables showed no difference on said. Moreover, I observe an indirect negative effect of failure feedback on participants' subsequent time allocation to environmental activities which occurs via changes in their commitment to the pro-environmental endgoal. Finally, study 3 verifies that the negative effect of failure on endgoal

commitment holds even in comparison with a control condition in which participants did not receive any feedback on their test performance. The indirect negative effect on subsequent intentions to pursue pro-environmental activities was also consistent with the first two studies. In sum, I provide strong evidence that socially normative behaviors and the overarching welfare-enhancing endgoals that are served by such behaviors are hierarchically connected via a feedback loop. Failing to perform a welfare-enhancing behavior negatively affects people's commitment to the corresponding endgoal, which in turn decreases the subsequent performance of behaviors serving the same welfare-enhancing endgoal.

A major contribution of the current paper is the answer to the question posed at outset of this paper: Does failure lead us to future achievement or condemn us to further failure? Our research indicates that the main effect of failure on subsequent endgoal pursuit is essentially negative; however, it depends upon at least three boundary conditions. First, study 1 demonstrates that failure toward abstract endgoals have detrimental effects on endgoal commitment, whereas failure in the presence of a specific endgoal motivates future pursuit of the endgoal. Second, building on Aronson's (1968) self-concept view of dissonance, I show in study 2 that self-concordance of pro-environmental subgoals increases people's commitment to an environmental endgoal after having failed an environmental IQ test. Third, based on Cooper and Fazio's (1984) New Look revision of cognitive dissonance, I show in study 3 that after failing an environmental IQ test, participants who were informed that their failure will have aversive consequences beyond those associated with the non-attainment of the endgoal remained as committed to the environment as participants in a control condition.

Overall, the present research proposes a model of subgoal failures based on the coalescence of cognitive dissonance and hierarchical goal systems. In three studies using

welfare-enhancing consumer behaviors, I show that failing behavioral subgoals impairs endgoal pursuit but not when the endgoal is well specified, concordant with one's self-concept, or the subgoal has aversive consequences.

Subgoal Failure and Cognitive Dissonance

My dissonance-based framework appears to account for the conflicting findings reported in the literature and provides a meaningful structure to organize our knowledge of goal failures. Empirical evidence from my three studies provides considerable support for a dissonance-based view of subgoal failure. First, I demonstrate that subgoal failure leads to increased levels of psychological discomfort (a traditional indicator of dissonance) in studies 1 and 2. This finding fits nicely with prior research that has shown goal failure to result in negative affect (Cron et al. 2005; Ilies and Judge 2005). Then, in study 3, I provide further support for the dissonance-based mechanism by providing evidence for dissonance reduction after adjusting commitment to the endgoal. Moreover, I demonstrate a series of dissonance-related factors (i.e., endgoal specificity, self-concordance, and aversive consequences of the subgoal) that moderate the effects of subgoal failure on endgoal commitment. Taken together, the pattern of effects associated with these boundary conditions are most cogently and succinctly accounted for by a dissonance-based view of goal failure. Lastly, the lack of change in self-esteem after exposure to subgoal failure suggests that the effects of failure on endgoal commitment in my work cannot be attributed to self-esteem reduction (DiPaula and Campbell 2002; Kernis et al. 1989). Indeed, my dissonance-based model and empirical results suggest that the self-concept is implicated in reactions to goal failures in a more specific manner (e.g., regarding self-concordance of an endgoal) than generalized aspects of self-esteem. Overall, my experimental evidence suggests that a dissonance-based view of subgoal failure is a useful and unifying framework to account for

equivocal prior findings in this area.

Many of the goal failures that surround consumer behaviors such as recycling, resource conservation, healthy eating, exercising (to name only a few) have significant implications on the well-being of society. Thus, the study of consumer goal failure is of considerable importance to marketers and policy makers alike. While it may be almost impossible to entirely avoid many of these goal failures, policy makers and marketers may minimize the undesirable effects of these incidences on future pursuit of the welfare-enhancing consumer goals by setting specific endgoals that consumers should strive for, making these endgoals consistent with their self-concept, or emphasizing the undesirable outcomes of failures.

Our research also contributes to the cognitive dissonance literature. Most dissonance studies have been limited to a few classic experimental paradigms (e.g., forced compliance, Festinger and Carlsmith 1959; induced hypocrisy, Fried and Aronson 1995), causing a faulty impression that the phenomenon itself is confined to a limited number of situations. I hereby introduce goal failures as a new paradigm that can be used in future dissonance research. The study of goal failures may present future directions to dissonance researchers, just as the introduction of the induced hypocrisy paradigm (Fried and Aronson 1995) has done in the past decade. Moreover, I also propose an improvement to the self-concept revision of Aronson (1968) which originally applies only to contexts where self-esteem is directly relevant and thus, provides a narrow perspective of dissonance. By acknowledging the multi-dimensionality of the self and demonstrating the implications of goal self-concordance, I extend the applicability of the theory to a wider set of situations.

Limitations and Future Directions

Two limitations of my research should be recognized. The first concern is that my

hypotheses were only tested in the context of two welfare-enhancing consumer goals. Nonetheless, I retain considerable confidence in my results due to two factors. First, the bulk of extant goal research has used either experiment-specific tasks (which do not have a real-life counterpart) or examined academic goals within college student samples. Our research is a notable exception to this stream of research, since I use two realistic contexts applicable to most consumers. Second, it has been suggested that "do your best" type of goals are more complicated than "all-or-nothing" goals as they are more vaguely defined and that the underlying process of goal pursuit might be different for both types of goals (Soman and Cheema 2004). I establish the generalizability of my conceptual model to both types of goals by theoretically accounting for the role of goal abstractness/specificity in this process. Future research is still required to be able to generalize the propositions arriving from a dissonance framework to different types of welfare-enhancing consumer goals not tested in present research (e.g., eating healthy, exercising, health monitoring, and charitable giving).

A second limitation of my work stems from the nature of controlled experiments. Our first experiment suffers from artificiality-based problems typically associated with hypothetical scenarios; wherein participants imagine what they would do and may not perfectly reflect their actual behavior in a similar situation. I addressed this limitation in the last two studies by creating an actual dissonance-arousing experience. Nonetheless, these studies were not completely free from shortcomings, as I operationalized the subgoal in terms of the performance on an environmental IQ test. I deliberately chose not to work with more prototypical behavioral subgoals (e.g., recycling) to be able to maximize my control over the manipulation and to resemble classic task-performance studies from the literature. Future research needs to explore more practical failure manipulations to enhance experimental realism.

Intriguing questions to be addressed in future research regard at what point a behavior actually registers as a failure to a person and when does accompanying dissonance arise. In our experiments, participants received clear performance feedback on their subgoal pursuit and were confronted with this feedback during the experiment. In real life, however, people might not have the ability or willingness to assess their subgoal performance—at least not immediately. For example, whether a person recognizes each instance of not recycling a soda can as a failure and subsequently experiences dissonance or needs to be reminded of these failures by some external stimulus for dissonance to be triggered remains unknown.

Many of the goal failures that surround behaviors such as recycling, resource conservation, healthy eating, exercising (to name only a few) have significant implications for the well-being of society. Thus, the study of goal failure is of considerable importance. While it may be almost impossible to entirely avoid many of these types of goal failures, policy makers may minimize the undesirable effects of these incidences on future pursuit of welfare-enhancing goals by setting specific endgoals that people should strive for, making these endgoals consistent with their self-concept, or emphasizing the undesirable outcomes of failures. A particularly interesting direction for such inquires would focus on ways to enhance self-concordance with welfare-enhancing goals. The self-concordance model of wellbeing suggests that imposing feelings of guilt and shame or emphasizing the presence of social norms with regard to such behaviors might result in the pursuit of welfare-enhancing goals for non-self-concordant reasons. Goals that are not congruent with one's self concept are found to influence persistence and performance negatively resulting in lower personal wellbeing over the long run (Sheldon & Elliot, 1999). On the other hand, people put more sustained effort toward, and perform better at, self-concordant goals, those they believe to be important or find enjoyable to pursue. Thus, either

enhancing beliefs in the importance of welfare-enhancing goals or emphasizing the pleasant and stimulating aspects of pursuing such goals might help improve their persistence in the face of inevitable failure.

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CHAPTER FOUR

ESSAY TWO

FROM BEHAVIOR TO FAILURE:
SELF-SCHEMA ACTIVATION MODEL OF SELF-REGULATION

Abstract

Consumer behavior is goal-directed; yet, self-regulation process often fails. To understand the nature of self-regulatory failures in consumer behavior, a crucial matter to understand is when a regular consumer behavior is considered a failure. The present essay claims that the same behavior might or might not be registered as a failure in consumers' minds, depending on the active self-schema at the time of the behavior and therefore, may have motivating or demotivating outcomes. The proposed self-schema activation model of self-regulatory failure predicts that a behavior will be perceived as a failure to the extent to which it is incongruent with the active self-schema. When a discrepancy between behavior and active self-schema is detected, people will be motivated to move closer to schema-congruent goals via self-symbolization. On the other hand, a schema-congruent behavior is expected to liberate people from the ongoing goal pursuit due to decreased discrepancy. When behavior is not related to the active self-schema, a self-perception-like process should ensue where an initial behavior encourages the performance of similar behaviors. The relationship between self-schema and outcomes of self-regulatory failures is expected to be moderated by the intensity of the initial behavior. These predictions find empirical support in two experiments.

INTRODUCTION

> *Though Gulliver stays the same size, he's incongruous and disproportionate—too gigantic or too minuscule—in relation to the people he visits on his weird voyages. He's a Brobdingnagian in Lilliput and a Lilliputian in Brobdingnag.*— Meyers, 2004

On a relaxed afternoon, Sally meets with a friend at a popular local coffee shop and the couple orders a cup of cappuccino together with a piece of chocolate brownie each. Both Sally and her friend eat up their brownies while having a nice chat and enjoy every bit of their desserts. Their "sweet tooth" has always been something they had in common and enjoyed to share with each other. Afterwards Sally goes to grocery shopping and purchases a few regular items such as milk, bread, cream cheese, peanut butter, and fruit. A few weeks later, she meets another friend with whom she regularly plays tennis and works out at the gym together. That morning, when Sally is getting ready for their exercise routine, her friend calls saying that she does not feel up to exercise and invites Sally over for a coffee, instead. After exercising on her own, Sally pays a visit to her friend who immediately serves a delicious piece of homemade mud cake that goes very well with coffee. Sally cannot refuse the offer and eats her dessert to accompany her friend. Afterwards, Sally makes a resolution not to indulge in unhealthy, high calorie food anymore and goes to the grocery store to purchase some non-fat milk, whole wheat bread, whole grain granola, and low fat cheese. Why does Sally behave inconsistently across two similar incidents? What is it that makes her enjoy the dessert the first time but feel remorse the next time? Why does she shop for different items on each occasion?

Researchers have shown considerable interest in the effects of self-regulatory failure on subsequent decisions and behaviors over the last few decades (e.g., Carver and Scheier 1981,

1982, 1998; Fishbach, Dhar, and Zhang 2006; see Baumeister and Heatherton 1996 for a review of earlier work). One common assumption inherent in this body of literature is that a particular behavior, experience, or event can be unambiguously decoded as a failure or success due to the on-site generation of diagnostic self-knowledge about the status of the incident with regard to goal attainment. That is, a perfectly functional feedback mechanism is presumed to be in charge of the self-regulation system at all times. In reality, however, neither do people have a single isolated goal to pursue (Fishbach and Dhar 2007) nor a constant self-focus in place to be able to constantly monitor their goal progress (Bargh 1990). A particular behavior may be recognized as a lapse or self-regulatory failure under certain conditions whereas it might go unnoticed or even recognized as a success under other circumstances. The present research asks what these conditions are and how they influence the consequences of self-regulatory failures. In particular, I am interested in exploring when self-regulation failures have a (de)motivating effect on subsequent goal pursuit and increase the (de)valuation of goal-specific means (Brendl, Markman, and Messner 2003; Markman and Brendl 2000).

To address these questions, I adopt a self-concept based goal-theoretic framework. The symbolic self-completion theory predicts that failing toward a self-defining goal propels individuals to self-symbolizing efforts aimed at winning back a renewed sense of completeness (Brunstein and Gollwitzer 1996; Wicklund and Gollwitzer 1982). However, the self-concept is known to be multifaceted, malleable and context-dependent such that all dimensions of the self-concept cannot be accessible in one's mind at a given moment. Instead, only a subset of the universe of self-conceptions is active at a given time depending on situational contexts or current experiences (Baumeister 1999; Markus and Kunda 1986; Wheeler, DeMarree and Petty 2007). As such, I aim to extend the symbolic self-completion model to a multidimensional framework,

accounting for the dynamic and malleable nature of the self-concept. Specifically, I propose that a situationally activated self-schema will motivate goal pursuit after a schema-incongruent behavior since the behavior will be perceived as a lapse or self-regulatory failure in reference to the active self-schema. Moreover, this enhanced motivation will result in the valuation of schema-congruent means and the devaluation of schema-incongruent means. Performing a schema-congruent behavior, however, should imply goal progress and liberate subsequent self-regulation, causing the evaluations of schema-congruent and -incongruent means to converge. On the other hand, in the absence of an active self-schema to serve as a goal standard, a behavior might not be indicative of one's progress toward or regression from a desired end, but may imply commitment to a goal (Fishbach and Dhar 2005; Fishbach et al. 2006). In this case, a self-perception-like process of reinforcement (e.g., Bem 1972; Fishbach and Dhar 2007) will drive people's responses wherein an initial behavior will activate a goal, increasing the likelihood of performing similar behaviors. In two experiments, I provide support for these predictions and further demonstrate that the magnitude of self-regulatory failure intensifies subsequent efforts directed at symbolic self-completion.

The present research introduces a model of self-regulation based on self-schema activation drawing on symbolic self-completion theory and the malleable self-concept (Baumeister 1999; Markus and Kunda 1986). The proposed framework fits nicely with recent developments on sequential consumer choice (e.g., Huber, Goldsmith, and Mogilner 2008; Laran and Janiszewski 2009) and extends our current understanding of this phenomenon by focusing on the background goals driving the direction of choice sequences.

SYMBOLIC SELF-COMPLETION AND MALLEABLE SELF-CONCEPT

Wicklund and Gollwitzer (1982) argue that people construe self-definitions to identify their lasting qualities, which in turn guide their future thoughts and actions. Importantly, the pursuit of a self-definition is claimed to have a *goal-directed* character wherein people actively move toward completing their self-definition using symbols (e.g., objects, mastery of identity-relevant skills, performance of certain classes of behaviors, and so on) to indicate goal attainment (Brunstein 2000; Wicklund and Gollwitzer 1982). Self-completion idea holds that different indicators of self-identity may serve as substitutes for one another and therefore, people are motivated to acquire alternative symbols for self-completion purposes. A common example of self-symbolizing behavior from consumer behavior literature is to display symbols of one's past life and future dreams at the workplace (Tian and Belk 2005).

Of great interest to the present research is that people are particularly expected to engage in self-symbolizing when they experience a shortcoming in a self-definition to which they feel committed (Brunstein and Gollwitzer 1996; Brunstein 2000). A self-regulatory failure on a self-defining dimension is considered a self-definitional shortcoming and motivates people to tackle further identity-relevant tasks and engage in self-symbolizing behavior to ensure the achievement of the desired self-definition. Once a person has established a firm sense of goal-directedness, failures trigger an increase in the volitional strength instead of prompting disengagement from the goal (Carver and Scheier 1998; Gollwitzer 1990; Heckhausen 1991). This mechanism is also consistent with the cybernetic feedback control systems of self-regulation, where the perceived difference between a behavior and the reference point motivates discrepancy reduction (Carver and Scheier 1998) and hence, energizes movement toward the self-definition. One necessary condition underlying the increased motivation for the pursuit of

self-definitional goal after experiencing a self-regulatory failure is the availability of alternative self-symbolizing routes to pursue at the moment. Otherwise, the whole self-regulation system might be impaired in which the perceived incompleteness might intervene with the pursuit of goals unrelated to the identity being threatened (Brunstein 2000). Brunstein and Gollwitzer (1996) investigate the effects of failure on subsequent performance toward the professional goals and find support for the above predictions. In particular, students failing at a professionally relevant task demonstrate increased effort to reach their professional self-definition. Failure at an identity-irrelevant task, however, is found to decrease subsequent performance toward that particular identity-irrelevant goal.

While providing significant insight into the process of self-regulation, the symbolic self-completion theory appears to rely on a relatively stable and stationary view of self-concept. Wicklund and Gollwitzer's framework (1982) presumes that self-definitions are volitionally and consciously constructed, rather stable and chronically accessible, and that self-definitional goals are actively pursued and regulated by the person. While not completely challenging their conceptualization of the self, other research shows that there is more to the self-concept than a collection of permanent self-identities. Although the general structure of the self-concept may remain stable over time, the parts of it that come to mind tend to fluctuate (Baumeister 1999; Markus and Kunda 1986; Wheeler et al. 2007). The contemporary conceptualizations of the self-concept unequivocally characterize self-concept as a multifaceted (i.e., containing diverse elements including behaviors, evaluations, goals, memories, aspirations, obligations, roles, and so on), dynamic and malleable (i.e., the content of self-concept is influenced by both situational and personality factors) entity (e.g., Aaker 1999; Baumeister 1999; Markus and Kunda 1986; Wheeler et al. 2007). Thus, rather than speaking of a single, chronic self-concept, it seems more

appropriate to allude to a collection of self-schemata which can exist explicitly or implicitly, and be activated or construed in response to personal experiences, social contexts or physical surroundings (DeSteno and Salovey 1997; Wheeler et al. 2007). The following section extends the symbolic-self completion theory based on the malleable view of the self-concept to provide a flexible definition of self-regulatory failure and derive hypotheses to explain its consequences.

SELF-SCHEMA ACTIVATION MODEL

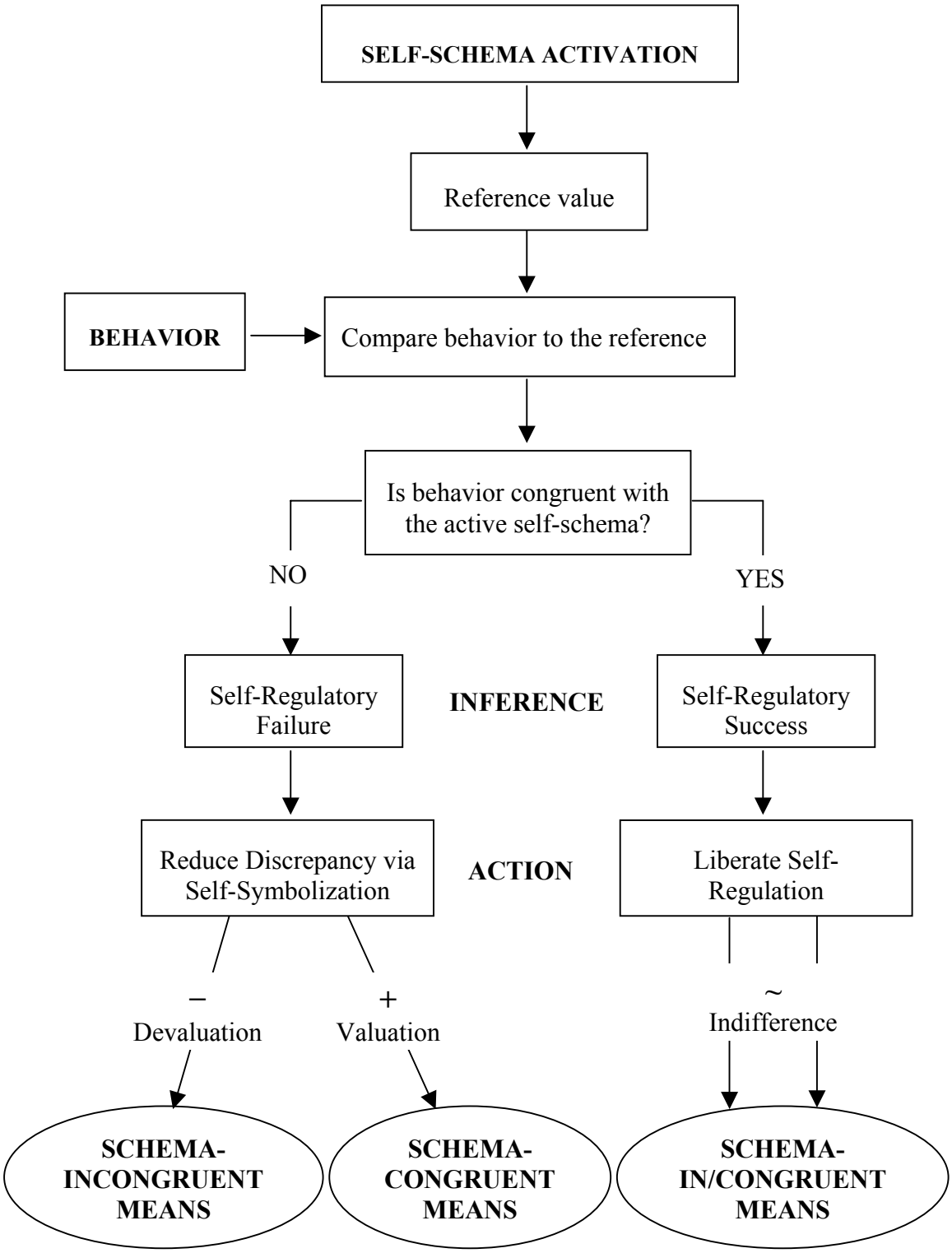
Markus and Kunda (1986) refer to the subset of all possible conceptions or schemata of the self that is active at a given moment as the *working self-concept*. The content of a particular working self-concept depends on what subset of selves was active just at the preceding moment and what has been invoked as a result of an experience, event, situation, affective or motivational state or the social situation. The self-concept is malleable in the sense that the content of the working self-concept changes over time and a particular *self-schema* dominates the working self-concept at a given moment (DeSteno and Salovey 1997; Markus and Kunda 1986). Activation of a particular self-schema involves increasing the accessibility of relevant self-information and the organization of this information into a meaningful concept. Although people are expected to favor certain schemata to organize their self-concepts due to their idiographic experiences and cultural ethos, alternate schemata can be temporarily activated as a function of situational cueing and thus, alter both the structure and the content of the working self-concept (DeSteno and Salovey 1997). Each active schema then acts as a distinct perceptual filter that refocuses attention on different items of self-knowledge and influences the person's subsequent information processing, cognitive processes, and resulting behaviors (Aaker 1999; DeSteno and Salovey 1997; Wheeler, Petty, and Bizer 2005).

Accordingly, I propose a model of self-regulation based on self-schema activation in order to explain the consequences of regulatory failures on subsequent self-symbolizing cognitions and behaviors. While previous research on symbolic self-completion has examined subsequent task performance as the focal dependent variable (e.g., Brunstein and Gollwitzer 1996; Brunstein 2000), I will focus on the resulting changes in the valuation and devaluation of schema-congruent and schema-incongruent means (Brendl et al. 2003; Markman and Brendl 2000). Once activated, a self-schema is expected to have relative dominance over other aspects of the self-concept and create a motivational state akin to that of chronic self-definitions. Personal experiences, events, and behaviors will be evaluated from the perspective of the active self-schema which will act as an ideal standard to attain. Once a behavior is perceived to be incongruent with the active self-schema, the regulatory system will identify it as a failure and the person will engage in self-symbolizing in order to complete the damaged self-schema by reducing the discrepancy between current and ideal states (Carver and Scheier 1998; Fishbach et al. 2006). Self-symbolizing will take the form of valuation of schema-congruent means and devaluation of schema-incongruent means (see Figure 4.1 for the complete model).

If a schema-congruent behavior is performed, the discrepancy between actual and ideal selves will decrease. This perceived goal progress might reduce the regulatory tension and liberate people from further self-symbolizing efforts (Fishbach and Dhar 2005; Fishbach et al. 2006). That is, people experiencing a self-regulatory success are not expected to be as motivated to continue self-regulation as those experiencing a failure and as a result, the value derived from schema-congruent and schema-incongruent means are expected to be less polarized. On the other hand, a schema-unrelated behavior is not expected to signal failure-or success-related feedback to the regulatory system. Instead, either a nonmotivational response will be generated where

FIGURE 4.1

SELF-SCHEMA ACTIVATION MODEL OF SELF-REGULATORY FAILURE



people would infer their attitudes from this overt behavior (self-perception theory; Bem 1967, 1972) or the behavior will start a new self-regulatory process by activating a related goal (e.g., Laran and Janiszewski 2009; Wadhwa, Shiv, and Nowlis 2008). Research suggests that, in such cases, people would infer high commitment to the goals served by this initial act and low commitment to those inhibited by it (Fishbach et al. 2006). As such, subsequent acts are expected to be consistent with the initial behavior and goal-congruent means should be valued while goal-incongruent ones are devalued.

Going back to my original example, this framework explains the process underlying Sally's seemingly conflicting responses across two incidents. In the first occasion, Sally's goal is to enjoy an afternoon with her friend and have some pleasant time. She has a pleasure-and -fun oriented mindset; therefore, eating a dessert and sharing the enjoyment with her friend appears to be congruent with her active goal. Hence, the "indulgent" decision does not register as a self-regulatory failure but a success in reference to the active self-schema. As a result, Sally is likely to feel closer to her active self-schema and decrease future efforts for symbolic self-completion. On the second occasion; however, the fact that it is a work-out day and she will meet her regular "exercise buddy" activates a health-conscious, athletic self-schema which is incongruent with the act of consuming a calorie-rich dessert. This time, the behavior is judged to be indulgent and the perceived discrepancy from the ideal self triggers a discrepancy-reduction mechanism. Sally engages in symbolic self-completion by choosing schema-congruent means (i.e., non-fat milk, whole wheat bread, whole grain granola, and low fat cheese) in her subsequent shopping episode. A third possibility that is not discussed within the initial example would be the case where eating a dessert is not relevant to Sally's self-schema. In that case, she would deduce that she likes desserts and enjoys pleasurable sensory experiences, would be more likely to make

similar choices in the future. As such, I propose the following hypotheses:

> **H1:** Behaviors incongruent (vs. congruent) with the active self-schema will lead to (a) the valuation of schema-congruent means and (b) the devaluation of schema-incongruent means.
>
> **H2:** In the absence of a particular self-schema, an initial behavior will lead to the valuation of means that are behavior-congruent.

Besides these two hypotheses, I also expect that behaviors congruent with the active self-schema will lead to indifference between schema-congruent means and schema-incongruent means; however, since this is a null effect that cannot be tested directly, I do not formulate it as a research hypothesis.

The self-schema activation model of self-regulation extends self-completion theory (Wicklund and Gollwitzer 1982) and following research on the role of self-definitional goals in determining the consequences of failure on at least three fronts (Brunstein and Gollwitzer 1996; Brunstein 2000). First, the present model accounts for the malleable and dynamic nature of the self-concept by extending the scope from chronically accessible, stable self-definitions to temporarily activated self-schemata. Second, while past research has studied objectively identifiable instances of failure signified by clear feedback, I focus on a broader set of regular behaviors which cannot be unambiguously classified as failure or success in isolation but gain meaning with regard to an active self-schema. This extended view of self-regulatory behaviors is fairly realistic since people seldom receive clear and objective feedback on their behaviors in real life, indicating that they have failed or succeeded. Rather, they perform certain behaviors and in return, receive ambiguous internal and/or external feedback which they need to interpret subjectively. It is important to note that the approach adopted in the current research diverges from a growing body of literature which assumes a conservative dichotomous distinction

between certain self-regulatory domains (Berkowitz 1996) such as self-control versus impulsive behaviors (e.g., Baumeister and Heatherton 1996), vices versus virtues (e.g., Khan and Dhar 2006), or temptations versus goals (e.g., Fishbach, Friedman, and Kruglanski 2003). The alternative perspective I propose allows for a more flexible and complete understanding of self-regulation, acknowledging the possibility that a typical "vice" behavior can imply success and a typical "virtue" can connote failure depending on the particular self-schema operating in the background (e.g., indulgent choices are congruent and abstinent behaviors are incongruent with a hedonic self-schema). Third, as mentioned before, the present research examines the effects of self-regulatory failure on means evaluations and therefore, has major implications for consumer welfare.

Before I move on to the description of my studies, it is essential to map the proposed framework in recent research on sequential consumer choice in order to clarify the contribution to our understanding of self-regulatory failures in consumer choice.

REINFORCEMENT AND BALANCING IN SEQUENTIAL CHOICE

In their recent review of the literature on sequential choice, Huber et al. (2008) discuss two important properties that resolve goal conflicts. First one is called "reinforcement" and refers to the cases where an initial choice is followed by consistent choices and behaviors. Second one involves "balancing," where the first choice leads to goal attainment allowing a competing goal to determine the subsequent choice. Recent research efforts have been directed at understanding the conditions under which these contradictory sequences of behavior emerge.

Reinforcement (or "highlighting"; Dhar and Simonson 1999) of a focal goal has been shown to occur when individuals focus on their commitment to the goal associated with their

initial choice (Fishbach and Dhar 2005, 2007) or when an initial behavior activates a goal (Laran and Janiszewski 2009). Laran and Janiszewski (2009) show that when their research participants ate a chocolate truffle (in the absence of an active goal), their evaluations of tasty food items increased. Similarly, Wadhwa et al. (2008) have shown that sampling a food item that is high in incentive value (e.g., chocolate) increases subsequent reward-seeking behaviors. Yet another evidence for reinforcement process comes in the form of the "shopping momentum effect" (Dhar, Huber, and Khan 2007) where an initial purchase increases the likelihood of further purchases in the same store. A shift from deliberative to implemental mindset is shown to be the mechanism driving subsequent purchases. Although suggesting different theoretical mechanisms to explain the reinforcement phenomenon, these alternative accounts have one component in common: self-regulation process starts with the initial behavior. As such, these findings are consistent with my prediction that in the absence of an over-arching self-schema (or another goal standard), a self-perception-like process will drive future behaviors where people will tend to highlight an initial act by performing similar acts in the subsequent episode. However, these findings do not speak to the situations where self-regulation process has already started before the initial behavior as it happens when a self-schema is activated.

Balancing sequences, on the other hand, have typically been observed in the presence of a background goal (Fishbach and Dhar 2007). If an initial action is interpreted as progress toward a background goal, inferred partial goal attainment results in the release of the achieved goal and a reduced effort for subsequent self-regulation (Fishbach and Dhar 2005; Fishbach et al. 2006). On the other hand, if it is interpreted in terms of lack of progress toward a goal, motivation to goal attainment is enhanced and goal-consistent behaviors will be performed. Our model of self-schema activation proposes that a progress inference is more likely under an activated self-

schema which serves as a behavioral standard. As such two subsequent behaviors following schema activation are expected to demonstrate a balancing pattern. In consistent with my predictions, impulsive individuals (i.e., chronically active impulsive self-schema) are shown to be more likely to give in to temptation after recalling an earlier act of resisting rather than an act of indulging (Mukhopadyay, Sengupta, and Ramanathan 2008). The inconsistency between the recalled act and the chronic self-schema appears to reinforce schema-congruent behavior. My framework provides further insight into this process and proposes that the balancing sequence would not be perfectly symmetric across self-regulatory success and failure. That is, I expect that a schema-incongruent initial act will strongly motivate the performance of schema-congruent behaviors and attenuate schema-incongruent behaviors, resulting in a contrast effect whereas a schema-congruent initial act will cause the subsequent evaluations of schema-congruent and –incongruent options to converge.

Balancing has also been widely documented in self-control literature. Initial choices requiring self-control have been shown to deplete mental resources, hence resulting in indulgent choices (Muraven and Baumeister 2007). Similarly, evidence on licensing confirms that an initial virtuous choice licenses a subsequent vice behavior (Khan and Dhar 2006). In licensing studies, the experimental procedure involves activating a virtuous goal (e.g., asking participants to imagine that "they had volunteered to spend three hours a week doing community service.") followed by a virtuous choice (e.g., choosing between two community services) and providing them with a subsequent opportunity to make an indulgent choice. As predicted by my self-schema activation model, they find evidence for a balancing sequence where an indulgent choice was rendered more likely by an initial virtuous choice under the active virtuous self-schema. Self-control and licensing literatures, however, distinguish firmly between virtuous behaviors

and vice behaviors and suggest unidirectional effects whereas I propose that rather than the content of the behavior, the sequence of events (i.e., self-schema activation > initial behavior > subsequent behavior) determines the outcome. As such, I expect to find symmetric patterns of self-regulation across different self-domains, regardless of whether they are "virtuous" or "indulgent".

The remainder of the paper presents a series of pretests, a pilot study, and two experiments designed to test the predictions of the self-schema activation model.

PRETEST 1: CHOOSING SELF-SCHEMATA

The focal self-concept dimension will determine the content and nature of self-schema activation manipulation, self-regulatory failure manipulation, and the choice of means to be evaluated. Therefore, I needed to select the context carefully to allow for the best test of the theoretical model. One of the major selection criteria is that the schema-domain should be moderately but not extremely important to the participant population to enable an effective manipulation of self-schema. If they are not involved at all and they do not view the dimension as an important part of their selves, the activation of a related self-schema may not be possible, reducing the power of my studies (Baumeister 1999; Markus and Kunda 1986). If, on the other hand, the self-concept dimension is overly salient and central to the self-concepts of the participants, then it will likely be chronically accessible and thus, might undermine the self-schema manipulation (Wheeler et al. 2007). In addition, I would like to select two contradictory schema domains to be able to show that self-schema activation model holds under opposite contexts (e.g., individualism versus collectivism; self-control versus self-indulgence). As such, pretest 1 is conducted to test a list of possible self-aspects on the selection criteria.

Participants of the pretest were 93 students enrolled in an introductory marketing class. The participants were given the names of 13 different values/self-concept domains followed by a brief description of each (see Appendix A) and asked to rate the extent to which each value is "central to your self-concept" and "important to you" on a 7-point scale. A value score was obtained by averaging the ratings on these two items for a given value. All values were rated significantly higher than the scale midpoint (for a one sample *t*-test with 92 degrees of freedom, test statistic ranged from 4.50 to 26.21, all *p*s < .01), providing a necessary baseline for self-schema activation. Three of the values (fun and enjoyment in life, warm social relationships, sense of belonging) received higher ratings than the rest (*M*s = 6.20, 6.33, and 6.17, respectively) and hence were not considered any further to avoid potential ceiling effect. Health consciousness (*M* = 5.54) and sensory pleasures (*M* = 4.80), together with materialism (*M* = 4.75) and value consciousness (*M* = 4.96) appeared as two most suitable pairs of conflicting values. Due to the growing interest in healthy consumption (e.g., Laran and Janiszewski 2009; Wadhwa et al. 2008), health consciousness and hedonism/pleasure seeking are selected as the focal self-schema domains to be used in the current research.

PRETEST 2: CHOOSING FACILITATIVE AND INHIBITORY MEANS

Once the self-schema domains have been selected, the next step is to generate the means that are viewed as instrumental or inhibitory to the focal self-schema. These stimuli will then be used in the mean evaluation task and serve as the dependent variable of interest. Recent research has focused on the evaluation of various products (e.g., Brendl et al. 2003) as well as the evaluation of various food items in similar designs (e.g., Goukens et al. 2007; Laran and Janiszewski 2009). I decided to focus on (de)valuation of healthy and unhealthy food items in

accordance with the self-schema contexts to be activated (i.e., healthy and hedonic self-schemata). Basically, healthy (unhealthy) food items are instrumental to a healthy (hedonic) self-schema but inhibitory to a hedonic (healthy) self-schema. An initial list of 50 food and drink items (see Appendix B) was selected based on the stimuli used in prior research. 116 college students enrolled in an introductory marketing class were asked to rate each item on two 7-point semantic differential items anchored by "unhealthy/healthy" and "unfulfilling/fulfilling". Nine healthy (i.e., cereal bar, low-fat yogurt, rice cracker, oatmeal, broccoli, granola, apple, banana, carrots) and nine unhealthy (i.e., brownie, hot dog, chicken nuggets, ice cream, nachos, waffle, French fries, potato chips, bacon) items were chosen. The healthy items were perceived to be significantly healthier ($M_{Healthy}$ = 5.89) than unhealthy items ($M_{Unhealthy}$ = 2.20; $t(115) = 40.85$, $p < .01$). The unhealthy items were perceived to be significantly more fulfilling than ($M_{Unhealthy}$ = 4.81) than healthy items ($M_{Healthy}$ = 4.45; $t(115) = 2.73$, $p < .01$).

PRETEST 3: MANIPULATING SELF-REGULATORY FAILURE

A third component of the self-schema activation framework is the manipulation of self-regulatory failure/success. An important consideration for the purposes of the current research is that the selected experimental stimuli frame the behavior, experience, or episodic information ambiguously such that it may or may not be perceived as a self-regulatory failure, depending on the active self-schema. A central claim in the proposed framework is that a behavior is mentally registered as a failure and motivates goal striving to the extent that it is perceived to be discrepant from the active self-schema. Therefore, manipulations involving typical knowledge-, skill- or ability-based experimental tests wherein clear failure versus success feedback is provided to participants cannot be used to stay true to the premises of this research.

Vignettes have been widely used as a method of experimental manipulation in the literature since they are highly flexible to be adjusted to different contexts and when used in conjunction with simulation instructions, they can have self-referencing effect (Wheeler et al. 2007). For example, Fishbach et al. (Study 1, 2006) use three different vignettes to manipulate subgoal progress toward health-related, academic, and fitness goals which are shown to affect participants' perceptions of progress (or lack thereof) toward a given goal. The advantage of using vignettes is that the failure manipulation can be easily separated from the schema activation manipulation and presented as an unrelated study. Therefore, I decide to manipulate self-regulatory failure/success via a vignette involving a choice of healthy or unhealthy meal.

Three different scenarios were created to simulate food choice for breakfast, lunch, and dinner meals. There were two versions of each scenario, one for healthy choice and one for unhealthy. Each vignette starts with the word "Imagine" and continues to describe a regular day (morning, noon, or evening) where the food to be consumed in the imminent meal (breakfast, lunch, or dinner) is chosen (see Appendix C for a list of vignettes). I expect that a healthy meal will facilitate progress toward health-related goals whereas an unhealthy meal will indicate regression from health-related goals.

Participants were 117 college students enrolled in an introductory marketing course. They were randomly assigned to one of six vignettes. They were instructed to read the given scenario carefully and imagine themselves in that situation before answering the following questions. Then the participants rated the extent to which they believed the scenario to be realistic in comparison with their own life on a 7-point scale. Self-regulatory failure manipulation check measures followed. Two questions were asked to assess how close the participants would feel to their health goals after having this meal. Lastly, the participants were asked to rate how healthy

the food they chose according to the scenario was, on a scale from 1 (unhealthy) to 7 (healthy).

A 3 (scenario: breakfast vs. lunch vs. dinner) x 2 (type of food: unhealthy vs. healthy) factorial ANOVA on perceived realism of the scenario resulted in a small main effect of scenario ($F(2, 111) = 2.53$, $p = .08$). The breakfast scenario ($M = 4.39$) was perceived to be less realistic than lunch ($M = 4.80$) and dinner scenarios ($M = 5.33$). No other effects were significant.

Another 3 (scenario) x 2 (type of food) factorial ANOVA was run on perceived progress toward health goals. There was only a main effect of food type ($F(1, 111) = 114.69$, $p < .01$). Healthy choice ($M = 4.92$) led to higher levels of perceived goal progress than unhealthy meal ($M = 2.26$) regardless of which vignette was used. The results on healthiness ratings were consistent. Healthy food options were perceived to be healthier ($M = 5.69$) than unhealthy ones ($M = 2.29$; $F(1, 111) = 196.39$, $p < .01$) across all three scenarios.

Both lunch and dinner scenarios appeared to be equally suitable for self-regulatory failure manipulation. As such, while "salad and bottled water" and "grilled chicken with vegetables" appear to be suitable candidates for a healthy meal, "cheeseburger and fries" and "pizza and hot wings" can be used as unhealthy meal options.

PILOT STUDY: COMPLETE MANIPULATION CHECKS

To finalize the experimental design and materials for main experiments, I conducted a pilot study. Basically, this pilot study aims to test the effects of schema activation and self-regulatory failure manipulations on manipulation check measures.

Participants, Design and Procedures

Participants included business undergraduates ($N = 48$; 22 females) enrolled in an introductory marketing class who participated in exchange for course credit. The study used a 3

(self-schema: healthy vs. hedonic vs. charitable/control) x 2 (lunch choice: healthy vs. unhealthy) between-participants design. Participants were first randomly assigned to one of three schema conditions and then to one of two lunch scenarios.

Self-schema activation manipulation. In this research, self-schemata are viewed as nodes within a semantic network (Greenwald and Banaji 1985). A self-schema is activated when contextual or internal cues signal that a situation warrants a certain response (Bornstein et al. 2005). While it takes little effort or priming to activate chronically accessible schemata (Bornstein et al. 2005; Moskowitz et al. 1999), explicit self-referencing may be necessary to activate others (Wheeler et al. 2007). Research has shown that processes such as perspective taking via treating primed content as a characteristic of the self and self-presentation on a particular dimension of self-concept are effective in activating a specific self-schema (e.g., DeSteno and Salovey 1997; Tice 1992; Wheeler et al. 2007). As such, I used a self-portrayal manipulation in which the self-concept dimension of interest is defined and described as a positive characteristic to the participants, as suggested in the literature (Tice 1992). Negative self-representation is found to have different effects on self-beliefs than positive self-representation that are akin to those of self-regulatory failure (Spivak and Schlenker 1986 as cited in Schlenker 1987). In order to avoid confounds with the failure manipulation and to make sure the active self-schema serves as a goal standard, positive self-representation will be used in this research.

Consistent with the literature (Tice 1992; Vohs, Baumeister, and Ciarocco 2005), a cover story told the participants that the study involved the detection of personality traits in others' self-descriptions, and the participants were requested to serve as stimulus persons for judgments made by other students (see Appendix D for complete text of manipulations). Participants

received instructions that graduate students in training for degrees in marketing and psychology would view their self-portrayals to test whether they could detect which participants really possessed the trait they claimed to possess. Then, participants were asked to answer five questions about themselves (e.g., “How would you describe your interpersonal relationships (with friends, family, etc.)?,” “How would you describe your extracurricular activities?”) by portraying themselves as possessing a given personality trait for the purposes of the study, trying to remain generally truthful. They were specifically asked to draw on their past experiences and behaviors to substantiate their claims. Open-ended written responses were collected for each question. This question-answer type of manipulation was adapted from Tice (1992).

In the healthy self-schema condition, participants read a description of “health consciousness” and were asked to portray themselves as a health conscious person in their written responses. In the hedonic self-schema condition, the domain of self-portrayal was labeled “hedonism/pleasure seeking.” Lastly, the control condition included the activation of a self-schema that was unrelated to the focal domain of self-regulation (i.e., healthy consumption). Based on the results of pretest 1, I used “charitableness” as a suitable control schema since it was rated to be equivalent in importance to healthy and hedonic schemata.

Self-schema manipulation check measures. Manipulation check measures for self-schema activation followed right after the self-portrayal task (similar to Tice 1992). Consistent with the initial cover story, participants were asked to rate themselves on a couple of questionnaires so that the experimenter would have a measure of their "true" personalities to compare with the graduate student's ratings. Participants first read the following instructions: “Thank you very much for your cooperation and for helping us by presenting yourself as the type of person who esteems a particular personal value in life. In order for us to have a measure of your "true"

personal values to compare with the graduate students' ratings, it would be helpful to us to know what you actually value in life. On the next page you will see a list of values people might esteem in life including the value used in the self-portrayal study. Please read the description provided for each value carefully. Using the scales provided, please rate the extent to which each value is central to your self-concept and important to you. Please indicate your rating by circling the appropriate number on each scale." Then they rated themselves on two measures for each of the three values (i.e., health consciousness, pleasure seeking, and charitableness). The measures were anchored by "not central to my self-concept" and "not important at all to me" at 1, and "central to my self-concept" and "very important to me" at 9. An importance score was computed for each value by averaging the ratings on these two items.

Self-regulatory failure manipulation. The next step was the self-regulatory failure vignette which was positioned as an unrelated study. Participants read instructions introducing them to a "simulation exercise" where they were asked to read about and imagine themselves in a situation. They were then assigned to either a healthy or an unhealthy lunch vignette. Those in the healthy lunch condition read: "Imagine… It's a regular day in the summer school. You get out of class at noon and you feel very hungry. You need to have lunch before the next class starts. You decide go to Hillside Café and have salad and bottled water for lunch." Participants in the unhealthy lunch condition read: "Imagine… It's a regular day in the summer school. You get out of class at noon and you feel very hungry. You need to have lunch before the next class starts. You decide go to Hillside Café and have cheeseburger and fries for lunch."

Self-regulatory failure manipulation check measures. The participants first rated the perceived realism of the scenario in comparison with their own life on a 7-point scale. Next, they were asked to rate the healthiness of the lunch menu in the scenario on a scale from 1 (unhealthy)

to 7 (healthy). Lastly, the pleasurability of the lunch menu was measured by four seven-point semantic differentials anchored at "not pleasurable/pleasurable," "flavorless/tasty," "unfulfilling/fulfilling," and "not gratifying/gratifying" ($\alpha = .90$).

Analysis and Results

Self-schema manipulation check. One-way ANOVAs were run on value importance ratings. Schema activation did not have a significant effect on health consciousness and pleasure seeking ratings ($F_{Health}(2, 45) = 1.38$, $p > .26$; $F_{Hedonic}(2, 45) = 1.76$, $p > .18$). Although not significant, people in the control condition gave directionally higher ratings on both measures than participants in the other two conditions. Interestingly; however, there was a significant effect of self-schema on charitableness ratings ($F(2, 45) = 3.94$, $p = .03$). Hedonic schema ($M = 5.97$) resulted in lower levels of self-reported charitableness than both healthy ($M = 7.19$; $F(1, 45) = 1.22$, $p = .03$) and charitable ($M = 7.37$; $F(1, 45) = 1.40$, $p = .01$) schemata. Overall, the self-schema manipulation does not appear to work as expected.

Self-regulatory failure manipulation check. A 3 (self-schema) x 2 (lunch choice) factorial ANOVA was conducted on perceived realism of the scenario. Results yielded no significant effects, thus both scenarios were perceived to be similarly realistic ($M_{realism} = 4.83$) across self-schema conditions. This value was significantly higher than the scale midpoint ($t(47) = 3.16$; $p < .01$), further validating the content of the vignettes.

In a 3 (self-schema) x 2 (lunch choice) factorial ANOVA on perceived healthiness of the lunch menu, I found a main effect of lunch choice ($F(1, 42) = 56.02$, $p < .01$). The healthy lunch was perceived to be healthier ($M = 5.92$) than the unhealthy lunch ($M = 2.36$). No other effects were significant. A 3 (self-schema) x 2 (lunch choice) factorial ANOVA on perceived pleasurability of the lunch led to no significant main effects or interaction.

Discussion

The results of this pilot study indicated that the self-schema activation manipulation did not work as intended while the self-regulatory failure manipulation was more successful. An examination of the open ended responses recorded in the self-portrayal task showed that the participants found it difficult to keep a consistent self-portrayal across different questions. The answers to some of the questions did not have any relevance to the schema that I aimed to activate. As such, the question-answer format did not appear to have the intended effects. An alternative method would be the spontaneous self-description method developed by McGuire et al. (1978), which may present a more effective manipulation since the participants will not have to answer any specific questions while completing the self-portrayal task. In this manipulation, the participants are specifically required to write about themselves in their own words.

The pilot study further suggests that the charitable self-schema manipulation did not serve well as a control condition. It resulted in a directional (but not significant) increase in perceived health consciousness and pleasure seeking, contrary to my expectations. A relatively neutral control condition would provide for a more effective test of my model. Moreover, the results of this study suggested that when placed between two experimental manipulations, the self-schema manipulation check measures might lead to a reactance effect such that people in a healthy schema condition would consciously engage in a debiasing effort by presenting themselves as less health conscious than those in the control condition. A similar directional effect was also found for people in the hedonic self-schema condition. As such, manipulation checks appeared to cancel out the effects of the schema-activation manipulation.

Lastly, the pilot study resulted in conflicting results as for the effectiveness of the self-regulatory failure manipulation. While the unhealthy lunch was rated to be unhealthier than the

healthy lunch thereby serving as an effective failure condition with regard to health goals; the healthy lunch was not perceived to be less pleasurable than the unhealthy lunch and hence, failed to serve as a failure toward hedonic goals. A stronger and less ambiguous choice manipulation might be necessary to solve this potential confound.

STUDY 1: TESTING THE SELF-SCHEMA ACTIVATION MODEL

The objective of this study is to provide a complete test the self-schema activation framework in the context of health and pleasure goals. Within this motivational domain, my first hypothesis conjectures that after experiencing a self-regulatory failure, people in a healthy self-schema will value healthy food items more than unhealthy food items whereas this effect will be reversed for people in a hedonic self-schema. Following a self-regulatory success; however, they will be indifferent between healthy and unhealthy food options across both schemata. I expect to find a completely different pattern of effects in the absence of a particular self-schema, such that the direction of preference will parallel that of the preceding behavior (H2).

The design of study 1 was modified based on the findings of the pilot study. Four major modifications were made to eliminate the problems encountered in the pilot study. First, I switched from the question-answer format to a spontaneous self-description set-up for the self-schema activation manipulation in order to eliminate the difficulties associated with generating specific answers. Instead of writing their self-portrayals in response to a number of questions, participants were asked to write an essay to portray themselves in a certain light. Second, I took out the self-schema manipulation checks that were placed before the self-regulatory failure manipulation to prevent them from intervening with the psychological processes initiated by the self-portrayal task. A third change was made in the content of the control condition. Instead of

activating a seemingly unrelated (but potentially related) self-schema, I decided to ask participants in the control condition to write an essay about a typical day in their lives. This task is equivalent to the self-portrayal tasks in format and length but aims to achieve a neutral mindset rather than activating specific self-schema. Lastly, I slightly modified the wording of the lunch vignettes in order to highlight the choice and strengthen its effect. Instead of merely informing the participants of their decision to eat a given meal (healthy or unhealthy), the revised scenario talks about a choice between a healthy and an unhealthy option, followed by a decision to choose one of them. Contrasting two different food choices is expected to stress the goal-directedness of each option.

Participants, Design and Procedures

Participants included business undergraduates ($N = 110$; 60 females) enrolled in an introductory marketing class who took part in the study in exchange for course credit. The study employed a 3 (self-schema: healthy vs. hedonic vs. control) x 2 (lunch choice: healthy vs. unhealthy) between-participants design. All the manipulations and measures were completed electronically via MediaLab software in a computer lab.

Participants followed a procedure similar to the pilot experiment. First, they were assigned to one of the self-schema conditions. In the healthy and hedonic conditions, the participants received a survey titled "Self-Portrayal Study" and read the same cover story used in the pilot study (see Appendix E). Then they read the description of the value that they should use for the self-portrayal task. The value was either labeled "health consciousness" or "hedonism/pleasure seeking" and the accompanying description reflected the value in a positive light. Lastly, the participants in the healthy self-schema condition were reminded that their self-portrayal needs to reflect that "you are someone who is committed to physical and

mental well-being, and finds satisfaction in a healthy lifestyle." Those in the hedonic self-schema condition were asked to make sure that their self-portrayal should show that "you are someone who is committed to pleasurable and gratifying experiences, and finds satisfaction in a hedonic lifestyle." The participants were given five minutes to complete the self-portrayal task.

Meanwhile, participants assigned to the control condition received a survey titled "Self-Description Study" and received the following instructions: "This study involves describing what your typical day of the week is like. We ask you to serve as a stimulus person for judgments made by other students by describing how a typical day of the week is like for you. Graduate students in training for degrees in consumer psychology would view your descriptions to understand and analyze the lives of college students. The task will consist of writing a few self-descriptive paragraphs. Please try to imagine how a typical day of the week starts, evolves, and ends for you. Rather than giving quick and general responses, try to provide as much detail as you can. You may choose not to participate if you do not want to share the details of your life with us." They were also given five minutes to complete their self-descriptions.

After completing the self-schema activation manipulation, participants were thanked for completing this study and invited to an apparently unrelated simulation task. Participants were told that they were going to read the description of a specific situation and asked to imagine themselves in that situation. Then they received either the healthy lunch vignette or the unhealthy version. In the healthy (unhealthy) lunch condition, participants read the following: "Imagine…It's a regular school day in the fall semester. You get out of class at noon and you feel very hungry. You need to have lunch before the next class starts. You go to

Hillside Café[4] and check out the meal options in the cafeteria. After trying to decide between salad and pizza; you settle on having green salad and bottled water (hot pizza and cola)[5] for lunch."

Following the experimental manipulations, the participants were asked to rate how realistic the scenario was in comparison with their own life and then read the following paragraph: "Now imagine that a few hours have passed since lunch and it's late in the afternoon of the same day. You are looking for something to eat. On the following pages, you will see pictures of a number of food/snack items. Please indicate how much you would want each item that afternoon. While indicating your desire for the items, please take into account how you feel that afternoon after having the particular lunch you read about." Next, the participants were shown pictures and names of various food items and asked to rate their desire for each item. Lastly, manipulation checks were completed.

Measures

Pre-experimental health consciousness was measured using two items by "not central to my self-concept" and "not important at all to me" at 1, and "central to my self-concept" and "very important to me" at 7 ($\alpha = .88$). This measure was collected online two weeks prior to the study together with demographic variables and used as a covariate in the analyses.

Preference for healthy food was calculated as a difference score between standardized ratings of healthy and unhealthy food items. The participants rated four healthy[6] (e.g., cereal bar,

[4] Hillside Café is a café on the main campus of Washington State University, where the study was conducted.
[5] The cheeseburger and fries option that was used in the pilot study was replaced with a pizza option to enhance the perceived pleasurability of the meal. Cheeseburger was not rated to be highly pleasurable by most pilot study participants. Pizza was shown to be a successful candidate for unhealthy meal in pretest 3.
[6] Out of nine items selected in the pretest, four were chosen as focal healthy items since the healthy lunch scenario involved a salad. The mere fact that consumers tend to be variety seeking (e.g., Fishbach and Dhar 2007) might decrease the likelihood of eating more vegetables at the meal following a salad. Therefore, I focused on non-vegetable items. Accordingly, I selected four unhealthy items as focal stimuli.

low-fat yogurt, rice cracker, and oatmeal) and four unhealthy (i.e., brownie, chicken nuggets, ice cream, hot dog) items embedded in a set of neutral food items on a scale from 1 ("I do not want it") to 9 ("I want it"). A *desire for healthy food* score was obtained by summing up and standardizing the ratings of healthy items. Similarly, ratings of unhealthy items were summed up and standardized to obtain a *desire for unhealthy food* score. The latter was subtracted from the former to form the focal dependent variable. A positive score on this measure indicates a preference for healthy food whereas a negative score indicates a preference for unhealthy food. Similar preference measures have been used in consumer research (e.g., Novemsky and Ratner 2003; White and Dahl 2007).

Manipulation check measures for the lunch scenario were completed after the dependent measures[7]. First, participants rated the healthiness of the lunch menu in the scenario on a scale from 1 (unhealthy) to 7 (healthy). Next, they rated the pleasurability of the lunch menu on four seven-point semantic differentials anchored at "not pleasurable/pleasurable," "flavorless/tasty," "unfulfilling/fulfilling," and "not gratifying/gratifying" ($\alpha = .89$). After these measures participants were thanked and dismissed.

Analysis and Results

Manipulation checks. A 3 (self-schema) x 2 (lunch choice) factorial ANOVA was conducted on perceived realism of the scenario. Results yielded no significant effects ($F(2, 105) = 1.05$, $p > .3$), thus all four scenarios were perceived to be similarly realistic ($M_{realism} = 4.62$). This value was significantly higher than the scale midpoint ($t(109) = 3.45$; $p < .01$), further validating the manipulations.

A 3 (self-schema) x 2 (lunch choice) factorial ANOVA on perceived healthiness of the

[7] I did not include a manipulation check for self-schema activation in this study because a Single Target IAT study was being carried out simultaneously as an external manipulation check. The details will be discussed in study 1 discussion.

lunch menu resulted in a significant effect of lunch choice, as expected ($F(1, 104) = 303.76$, $p < .01$). The healthy lunch ($M = 6.19$) was rated as healthier than the unhealthy lunch ($M = 2.27$). Similarly, there was a main effect of lunch choice on perceived pleasurability of the lunch menu ($F(1, 104) = 7.06$, $p < .01$). The unhealthy lunch ($M = 5.16$) was perceived to be more pleasurable than the unhealthy lunch ($M = 4.46$). Hence, healthy (unhealthy) lunch appears to serve as an appropriate self-regulatory success for participants in healthy (hedonic) self-schema and an effective self-regulatory failure for those in the hedonic (healthy) self-schema condition.

Hypothesis tests. A 3 (self-schema) x 2 (lunch choice) factorial ANCOVA with pre-experimental health consciousness and perceived experimental realism as covariates[8] was conducted on preference for healthy food (see Figure 4.2). There was a significant main effect of self-schema ($F(2, 102) = 3.88$, $p = .02$). Pairwise contrasts indicated that healthy self-schema led to a greater preference for healthy food ($M = .49$) than hedonic self-schema ($M = -.19$; $p < .02$) and control condition ($M = -.31$; $p < .02$). The main effect of lunch choice was not significant ($F(1, 102) = 2.85$, $p > .09$). More interestingly, there was a significant self-schema by lunch choice interaction ($F(2, 102) = 3.76$, $p < .03$). I broke down the interaction by self-schema condition to test the research hypotheses. I found a significant difference between healthy and unhealthy lunch conditions under the healthy self-schema ($F(1, 102) = 3.80$, $p = .05$). In support for hypothesis 1, there was a greater preference for healthy food after eating an unhealthy lunch ($M = .67$) than a healthy lunch ($M = .25$). Similarly, a significant difference was found under the hedonic self-schema ($F(1, 102) = 5.49$, $p = .02$). Consistent with hypothesis 1, there was a greater preference for unhealthy food after eating a healthy lunch ($M = -.67$) than an unhealthy lunch ($M = .18$). There was only directional support for hypothesis 2. Participants in the control

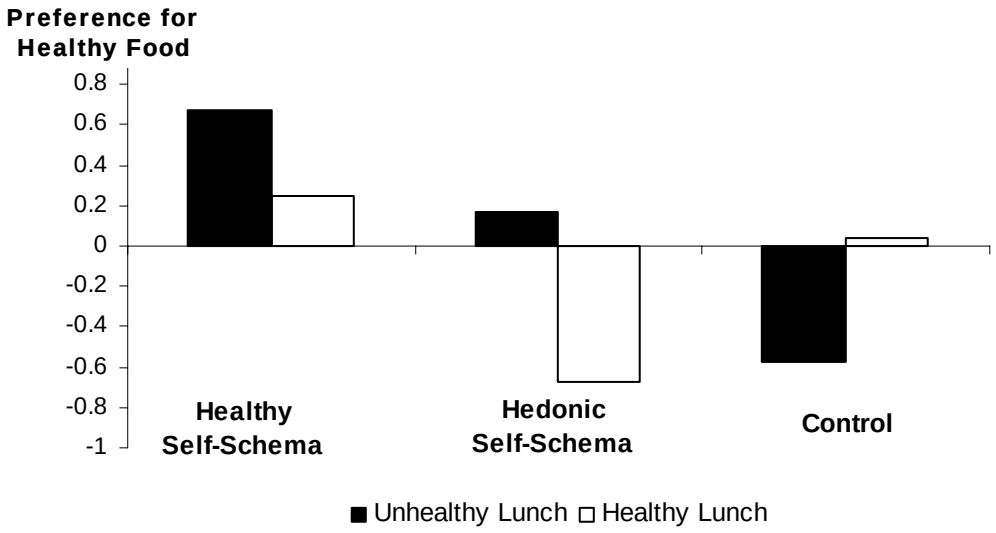
[8] Both covariates had a positive and significant effect on preference for healthy food ($F_{HealthCons}(1, 102) = 19.31$, $p < .01$; $F_{Realism}(1, 102) = 2.76$, $p = .10$).

condition showed a slightly higher preference for unhealthy food after unhealthy lunch (M = -.58) than healthy lunch (M = .04; $F(1, 102) = 1.59$, $p = .21$).

I also expected that the ratings of unhealthy and healthy food items would converge following self-regulatory success. In support of my predictions, there was no significant difference between healthy and unhealthy food ratings in healthy or hedonic self-schema (both Fs < 1).

FIGURE 4.2

SELF-SCHEMA BY LUNCH CHOICE INTERACTION



Additional analyses. An unpredicted gender effect emerged in further analyses. A 3 (self-schema) x 2 (lunch choice) x 2 (gender) factorial ANCOVA resulted in a significant main effect of gender ($F(1, 96) = 13.06$, $p < .01$) as well as a significant three-way interaction ($F(2, 96) = 3.54$, $p = .03$). Overall, females (M = .51) showed a greater preference for healthy food than

males (M = -.62). There was a significant self-schema by lunch choice interaction for females ($F(2, 96) = 7.16$, $p < .01$) but not for males ($F(2, 96) = 2.06$, $p = .13$). There was only a significant main effect of self-schema for males ($F(2, 96) = 6.48$, $p < .01$). The results are summarized in Table 4.1.

TABLE 4.1

TREATMENT MEANS PER GENDER

	Female		Male	
Self-Schema Condition	Healthy Lunch	Unhealthy Lunch	Healthy Lunch	Unhealthy Lunch
Healthy	0.68^{a}	1.11^{c}	-0.18^{a}	0.27^{a}
Hedonic	-0.53^{a}	1.35^{b}	-0.89^{a}	-1.51^{c}
Control	0.48^{a}	-0.41^{a}	-1.18^{a}	-0.71^{a}

NOTE.—Reading across the rows within each gender, means with the same superscript are not significantly different. Means superscripted with "a" and "b" are significantly different at $p<.05$ and means superscripted with "a" and "c" are significantly different at $p\leq.10$)

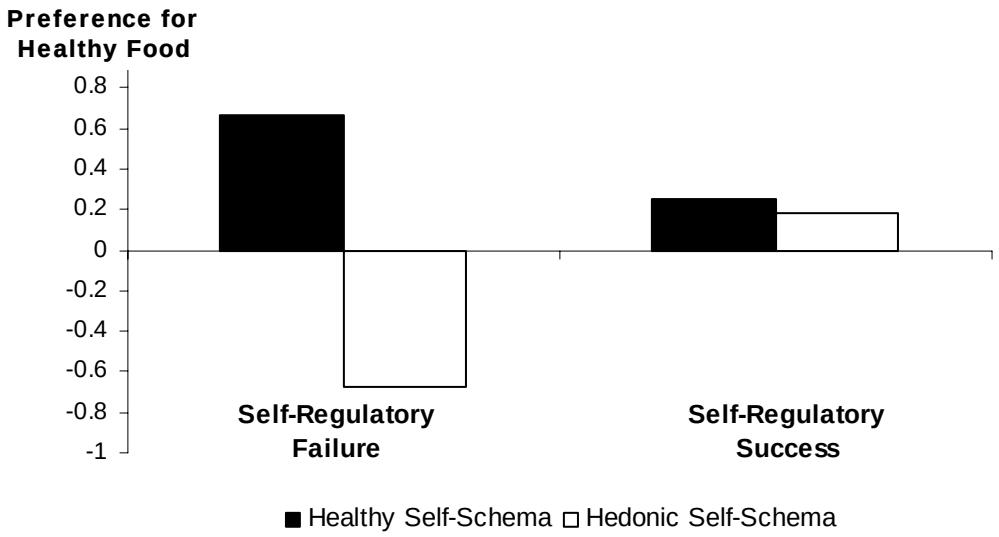
Discussion

The results of study 1 are consistent with the prediction that an initial choice might affect consumer preferences in different directions depending on the active self-schema. A self-schema serves as a standard by which behaviors and choices are judged resulting in an inference of self-regulatory success or failure. While self-regulatory success releases goal pursuit, self-regulatory failure leads to an increased effort to complete the impaired self-schema. Figure 4.3 presents a different way of illustrating the results of study 1. Note that self-regulatory failure refers to the unhealthy lunch choice for people having a healthy self-schema and the healthy lunch choice for those having a hedonic schema. I do not display the results for the control condition in this plot

since we cannot talk about self-regulatory success or failure there. Clearly, failure motivates goal-directed behavior so as to engender opposite preferences under competing schemata. My expectation that self-regulatory success would not move the food preference in any particular direction is confirmed by the data. After a success, participants in both healthy and hedonic self-schema conditions were indifferent between healthy and unhealthy food options resulting preference values around 0 ($M_{healthy}$ = .25; $M_{hedonic}$ = .18). The difference between two schema conditions was not significant ($F(1, 70) < 1$). On the other hand, following a self-regulatory failure, participants in the healthy schema condition showed a greater preference for healthy food whereas those in the hedonic schema condition preferred unhealthy food better ($M_{healthy}$ = .67; $M_{hedonic}$ = -.67). This difference was significant ($F(1, 70) = 11.30$, $p < .01$).

FIGURE 4.3

SELF-SCHEMA ACTIVATION AND SELF-REGULATORY FAILURE



Practically, an important implication of these results is that the elicitation of virtuous

behaviors (e.g., restrained choices) does not necessarily serve to the improvement of consumer welfare. Consumers who have an active hedonic schema need to satisfy their indulgent goals at first to be able to exercise some self-control later on. If, instead, they deny themselves an initial sense of pleasure, they are more vulnerable to subsequent food temptations. As such, this study implies that the vice-virtue distinction which is usually taken for granted (e.g., Khan and Dhar 2006; Muraven and Baumeister 2007) might not always be very clear and decisive in typical consumption episodes. An indulgent behavior might well be perceived as an accomplishment while a virtuous act might act as a self-regulatory failure. The schema-behavior consistency appears to be a more important determinant of the pattern of choice sequences.

Consumers appear to prefer consistency in their choices in the absence of an active self-schema. Although this highlighting sequence of behaviors is directionally consistent with my predictions, the difference between healthy and unhealthy lunch conditions was not statistically significant. To gain further insight, I tested for the difference between healthy and unhealthy food ratings separately within healthy and unhealthy lunch conditions using only the data from the control condition. In support of hypothesis 2, participants rated unhealthy food items higher (M = .12) than healthy food items (M = -.46; $F(1, 16) = 13.09$, $p < .01$) after unhealthy lunch whereas they gave higher ratings to healthy food items (M = .26) than unhealthy food items after a healthy lunch (M = .18; $F(1, 12) = 4.80$, $p < .05$).

An unexpected gender effect emerged in this study, demonstrating stronger effects for females than for males. This effect might be attributable to my choice of self-concept domains since females appear to be more sensitive to health-related stimuli than males (e.g., Fishbach, Friedman, and Kruglanski 2003) . Another factor that might have driven these results could be gender differences in the evaluation of the food items used as dependent measure in study 1. I

will include more food options in study 2 to rule out this possibility.

The major limitation of study 1 is the lack of a manipulation check for the self-schema activation manipulation. Instead of including a self-report measure that could have interfered with the experimentally manipulated processes, I ran a separate study with 150 participants in order to provide an alternative manipulation check. To understand whether activating a self-schema leads to a change in people's implicit self associations, I decided to use the D-scores on Single Target Implicit Association Test (ST-IAT; see Bluemke and Friese 2008) as a dependent variable. I prepared two versions of the ST-IAT, one for self-health associations and one for self-pleasure associations. In the self-health ST-IAT, the target category was "Self" (i.e., I, me, mine, myself, my) and the evaluative dimensions were "healthy" (i.e., healthy, energetic, sturdy, well, toned) and "unhealthy" (i.e., unhealthy, sick, frail, sluggish, flabby). In the self-pleasure ST-IAT, the target category was the same but the evaluative dimensions were "self-gratification" (i.e., pleasure, enjoyment, desire, indulgence, satisfaction) and "self-control" (i.e., self-control, restraint, discipline, inhibition, moderation). The study used a 3 (self-schema: control vs. healthy vs. hedonic) x 2 (ST-IAT: self-health vs. self-pleasure) between-participants design. I did not find a significant effect of self-schema activation on self associations. Unlike typical subliminal goal priming manipulations, the self-portrayal task aims to activate a self-schema by allowing participants to construct a particular self-view explicitly. The IAT technique might have been unable to capture this explicit effect at the implicit level. On the other hand, it is also likely that the temporary activation of a particular self-concept domain might not be sufficient to change stable aspects of the self-concept. In that case, I would merely expect the active self-schema to initiate a self-regulatory process and increase people's commitment to the focal goal. This issue will be addressed in study 2.

STUDY 2: MODERATING ROLE OF BEHAVIORAL INTENSITY

Study 2 extends my investigation to understanding how the nature of the focal behavior affects the intensity of the outcome. My framework is based on the assumption that a self-schema acts as a standard against which an initial behavior is judged. If the behavior moves one away from the active self-schema, a discrepancy reduction mechanism should be triggered whereby an act in the opposite direction will be performed. An alternative explanation for this balancing sequence could be that consumers have tendency to include variety in their choices even though that might result in the choice of items they do not like very much (e.g., McAlister and Pessemier 1982; Ratner and Kahn 2002). If variety-seeking behavior is responsible for the results of study 1, the effects should be driven solely by the content of the choices (e.g., healthy vs. unhealthy choice) rather than their role in an ongoing self-regulation process (Fishbach and Dhar 2007). In that case, the intensity of an initial behavior would not be expected to change the outcome. If on the other hand, the self-schema activation model holds, a greater perceived discrepancy should strengthen the subsequent desire for self-completion. Therefore, the intensity of the initial schema-incongruent act should increase the magnitude of perceived self-regulatory failure, in turn, amplifying the value of goal-serving means. Specifically, I predict that:

> **H3:** The greater the behavior-schema incongruence, (a) the greater the valuation of schema-congruent means and (b) the greater the devaluation of schema-incongruent means.

Participants, Design and Procedures

Business undergraduates (N = 202; 85 females) enrolled in an introductory marketing class participated in this study in exchange for course credit. The study employed a 2 (self-schema: healthy vs. hedonic) x 2 (lunch choice: healthy vs. unhealthy) x 2 (lunch size: small vs.

large) between-participants design. All the manipulations and measures were completed electronically via MediaLab software in a computer lab.

Participants followed a procedure similar to study 1. First, they were assigned to one of the two self-schema conditions. The self-schema manipulation consisted of the same self-portrayal task used in study 1; a control condition was not included this time. After completing the self-portrayal task in five minutes, participants were thanked for completing the first study and invited to complete an apparently unrelated simulation task. The wording of the vignettes replicated the template used in study 1. However, it included slight variants of the lunch choices to incorporate the additional lunch size manipulation. The lunch menu in the healthy lunch scenario read "a small green salad with nonfat dressing and bottled water" in the small serving condition and "a large green salad with low fat dressing, light yogurt, and juice" in the large serving condition. The corresponding choices in the unhealthy lunch scenario were "two slices of pizza and a small cup of cola" for small and "four slices of pizza with meat topping, buffalo wings, and a large cup of cola[9]" for large serving (Appendix G).

Following the experimental manipulations, the participants were asked to imagine the afternoon of the same day where they were looking for something to eat and shown pictures of a number of food/snack items. They were asked to rate their desire for each item and completed the manipulation checks for the lunch scenario. As an addition to the first study, I also included manipulation check measures to assess the effect of self-schema activation. Lastly, the participants were thanked and dismissed from the study.

Covariates

A number of covariates and the demographic variables were collected online two

[9] The small and large pizza servings were determined based on a pretest with 32 participants (20 females).

weeks prior to the time of the experiment.

Pre-experimental health consciousness. In addition to the two items used in study 1 (i.e., self-concept centrality and importance of health consciousness), I also included Gould's (1988) 9-item health-consciousness scale. I combined all eleven items to obtain a general health consciousness measure ($\alpha = 93$).

Power of food. I also collected a 21-item Power of Food Scale (Lowe et al. in press) which assesses the psychological influence of the mere presence or availability of food to control for individual differences between participants' reactions to the pictures of food ($\alpha = 95$).

Impulsiveness. I also wanted to control for people's chronic impulsive tendencies to be able to single out the subtle effect of self-schema activation. To this end, I included Puri's (1996) 12-item Consumer Impulsiveness Scale ($\alpha = 85$).

Dieting status. Lastly, I asked the participants to indicate whether they were currently on a diet or not followed by regular demographic questions.

Dependent Measure and Manipulation Checks

Preference for healthy food measure from study 1 was calculated in a similar fashion in this study. A difference score between standardized ratings of healthy and unhealthy food items was computed. This time; however, I included all eighteen (healthy and unhealthy) food items that were selected in pretest 3. These 18 items were embedded in a set of neutral food items and rated on a scale from 1 ("I do not want it") to 9 ("I want it"). I obtained *desire for healthy food* and *desire for unhealthy food* scores were obtained by summing up and standardizing the ratings of food items in each category. The difference between these two scores was labeled *preference for healthy food* where larger values indicated greater preference for healthier items.

Manipulation check measures. After the dependent measures, participants completed the

same manipulation check measures from study 1 to test the effectiveness of the lunch scenario. Besides, participants completed two additional semantic differentials anchored from 1 ("restrained" and "self-controlled") to 7 ("self-indulgent" and "hedonistic") to assess how indulgent their choice of lunch menu was. We expected that large servings would be perceived as more indulgent than smaller servings.

Lastly, the participants completed two commitment measures (i.e., "I find it important to pursue this goal," and "I'm thrilled by the prospect of reaching this goal") for both health consciousness and pleasure seeking goals on a scale from 1 ("strongly disagree") to 7 ("strongly agree") as a manipulation check for self-schema activation procedure (αs = .73 and .79, respectively).

Analysis and Results

Manipulation checks. A 2 (self-schema) x 4 (lunch condition) factorial ANOVA on perceived healthiness of the lunch menu resulted in a significant effect of lunch condition ($F(3, 194) = 69.17$, $p < .01$). Post hoc comparisons revealed that the small and healthy lunch ($M = 5.70$) was rated as healthier than the large and healthy lunch ($M = 5.12$; $p < .05$) which in turn was perceived to be healthier than the small and unhealthy lunch ($M = 3.19$; $p < .01$). Lastly, the small and unhealthy lunch was perceived to be healthier than the large and unhealthy lunch ($M = 1.68$; $p < .01$).

A 2 (self-schema) x 2 (lunch type) factorial ANOVA on perceived pleasurability of the lunch menu resulted in a significant effect of lunch type, as expected ($F(1, 198) = 9.37$, $p < .01$). Overall, unhealthy lunch menus ($M = 4.99$) received higher pleasurability ratings than healthy ones ($M = 4.41$). Another 2 (self-schema) x 2 (lunch size) factorial ANOVA resulted in a significant effect of lunch type on the extent to which the lunch menu was perceived to be

indulgent ($F(1, 198) = 3.71$, $p = .055$). Large lunch menus ($M = 4.46$) were perceived to be more self-indulgent than small ones ($M = 3.95$).

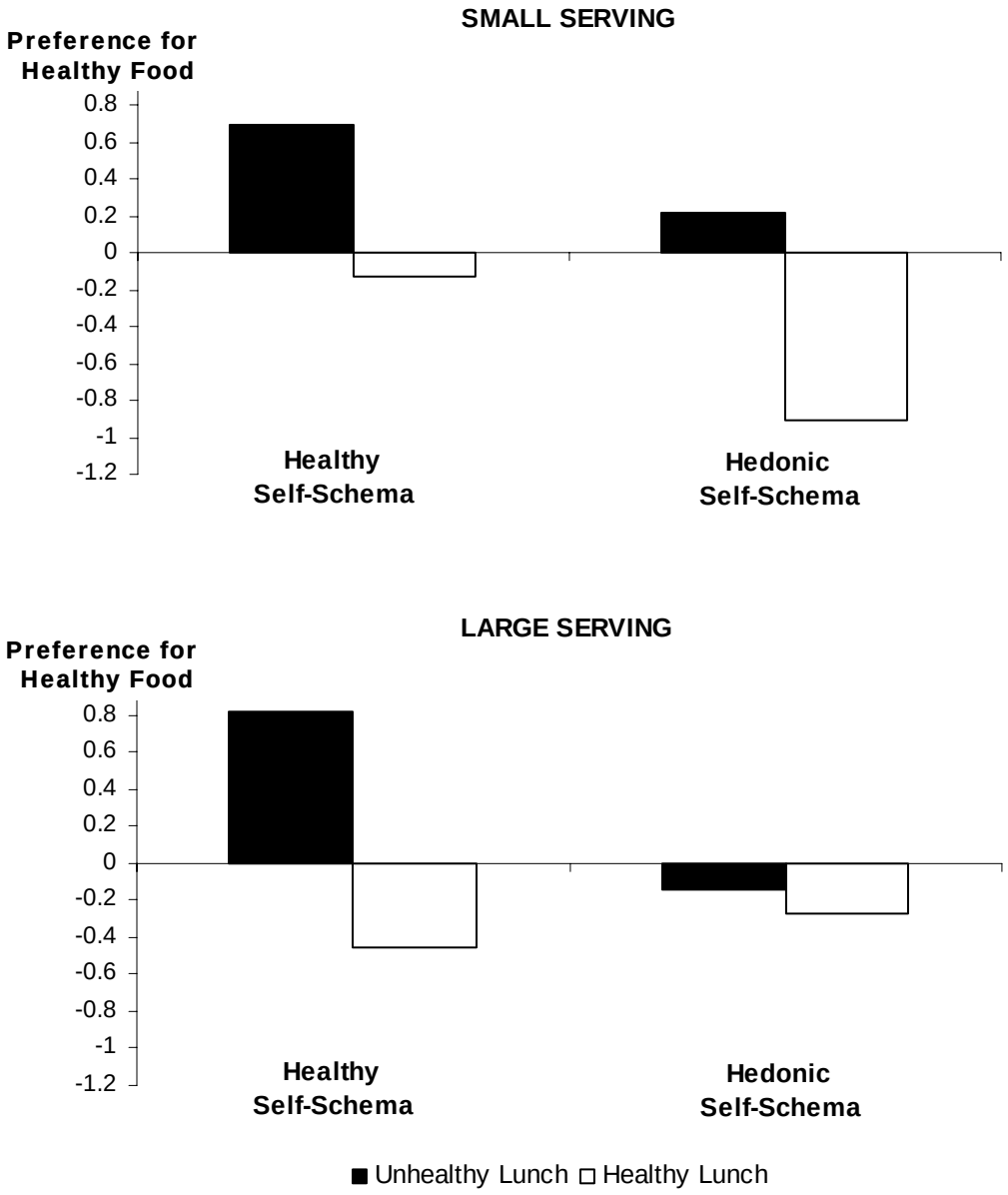
A 2 (schema: healthy vs. hedonic) x 2 (goal commitment: health consciousness vs. pleasure seeking) mixed ANOVA was run to test the self-schema activation where goal commitment was the repeated measures factor. A significant two-way interaction ($F(1, 200) = 10.05$, $p < .01$) was obtained in support of the schema activation manipulation. People in a healthy self-schema ($M = 6.05$) were somewhat more committed to health consciousness goals than those in the hedonic schema ($M = 5.80$; $F(1, 200) = 3.17$, $p < .08$) and significantly less committed to pleasure seeking goals (Ms = 4.83 and 5.24, respectively; $F(1, 200) = 4.93$, $p < .03$).

Hypothesis tests. I basically expected to find a greater effect of lunch type in the large serving condition for the healthy self-schema since a large and unhealthy lunch should act as a big failure triggering a strong self-completion mechanism. Similarly in the hedonic self-schema, I anticipated that there would be a stronger effect in the small lunch condition since a small and healthy lunch would serve as a big failure. A 2 (self-schema) x 2 (lunch type) x 2 (lunch size) ANCOVA was run on preference for healthy food scores where gender, health consciousness, power of food, impulsiveness, and dieting status were included as covariates[10]. Significant main effects and two-way interactions were modified by a significant three-way interaction ($F(1, 189) = 4.57$, $p = .03$; see Figure 4.4). As predicted, for participants in a healthy self-schema there was a significant difference between unhealthy and healthy lunch conditions within the large lunch condition ($F(1, 189) = 9.18$, $p < .01$). When participants had a healthy self-schema, they showed

[10] All covariates were significantly related to participants' preference for healthy food (all ps < .05). Gender (dummy coded with female as "1"), health consciousness, impulsiveness, and dieting (dummy coded where "1" indicated being on a diet) had a positive effect whereas power of food had a negative effect.

FIGURE 4.4

SELF-SCHEMA BY LUNCH TYPE BY LUNCH SIZE INTERACTION



a greater preference for healthy food after eating a large unhealthy lunch (M = .81) than a large healthy lunch (M = -.45). There was no significant difference within the small lunch condition ($F(1, 189) = 2.69$, $p > .10$). For participants having a hedonic self-schema; however, the

significant difference between unhealthy and healthy lunch conditions occurred within the small lunch condition ($F(1, 189) = 11.65$, $p < .01$). When participants had a hedonic self-view, they showed a greater preference for unhealthy food after eating a small healthy lunch ($M = -.90$) than a small unhealthy lunch ($M = .22$). There was no significant difference within the large lunch condition ($F(1, 189) < 1$). In study 2, gender did not interact with any of the experimental manipulations but was a significant covariate.

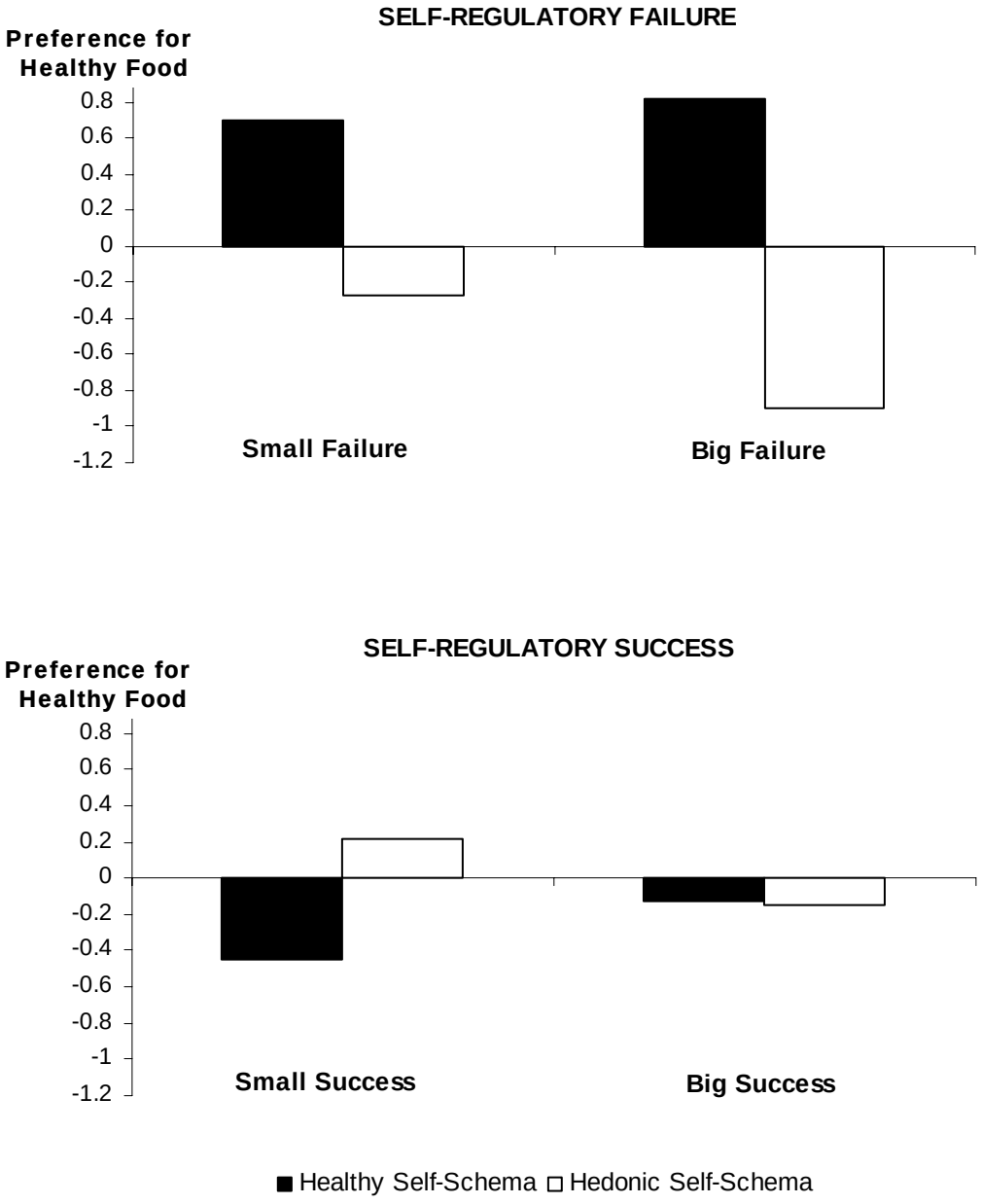
Discussion

Study 2 addresses a major limitation of study 1 by demonstrating how self-schema activation manipulation works. The ST-IAT study suggested that self-schema activation may be directly activating a goal instead of changing people's self-related associations. Consistent with that expectation, I found that a temporary activation of the healthy (hedonic) self-schema increased participants' commitment to health consciousness (pleasure seeking) goals. Note that this measure was collected at the end of the study, after the completion of self-portrayal task, lunch vignette, and food evaluation task instead of right after the self-portrayal. One way of separating the motivational effects of goal activation from the cognitive effects of trait priming is applying the *temporal escalation criterion* (Chartrand et al. 2008), which suggests that once activated, goals increase in strength over time whereas nonmotivational constructs gradually decay (Bargh et al. 2001). The significant effect of the self-schema manipulation after an extended period of time as opposed to immediately (as in the pilot study) implies that the contextual activation of a self-schema might, in fact, initiate a self-regulation process rather than changing the cognitive structure of the self-concept. This finding is consistent with the main premise of the symbolic self-completion theory that the pursuit of a self-definition has a goal-directed character which induces people to actively proceed toward the completion of their self-

definitions (Brunstein 2000; Wicklund and Gollwitzer 1982).

FIGURE 4.5

SELF-SCHEMA ACTIVATION AND MAGNITUDE OF SELF-REGULATORY FAILURE



The second study is also important in that it replicates the findings of study 1 and provides further support for the predictions of the self-schema activation framework. The role of lunch size in intensifying the self-completion process following a self-regulatory failure shows that the balancing sequence found in active self-schema conditions (i.e., healthy and hedonic self-schema) cannot be attributed to consumers' variety-seeking tendencies. This process of self-schema completion following self-regulatory failure can be clearly viewed if the results are displayed in a different fashion. As shown in Figure 4.5, a big failure leads to an increased polarization of food preferences between healthy and hedonic self-schemata as compared to a small failure. As hypothesized, people are most willing to eat healthy food after having indulged despite having a healthy self-schema. On the other hand, they are most willing to indulge in unhealthy food after having consumed an unsatisfying healthy meal while they have a hedonic self-schema. After making a large progress toward their endgoal; however, they remain indifferent between healthy and unhealthy food options regardless of the overarching self-schema. As such, the magnitude of the self-regulatory failure appears to be an important determinant of subsequent behavioral intentions.

The unexpected moderating effect of gender found in study 1 was not replicated in study 2. Including more healthy and unhealthy food items in the means evaluation task might have eliminated the gender interaction. Overall, the self-schema activation model of self-regulation appears to apply equally to both males and females.

GENERAL DISCUSSION

Contributions and Implications

In this paper, I introduced a model of self-regulation based on self-schema activation and

provided empirical support for model predictions in two experiments. I primarily show that our behaviors gain self-regulatory meaning with regard to a temporarily activated self-schema and that this meaning may shift across different incidences as different parts of our self-identity become highlighted in the background. In their review piece on sequential choice, Huber et al. (2008) arrive at the following conclusion:

> "When individuals are certain about their goal (to be charitable, for example), they are more likely to attend to evidence of progress and will feel licensed to balance in their subsequent choice. In contrast, when individuals are uncertain about their goal, they are more likely to attend to evidence of goal commitment and will feel motivated to continue in that goal pursuit through reinforcement."

My findings are in line with their conclusion and bring further understanding into the definition of "being certain or uncertain about a goal" and the nature of the balancing sequence. I propose that the temporary activation of a particular self-schema triggers a self-regulatory process. While under the influence of the self-schema, people feel certain of their commitment to the goal activated by it and perform a balancing sequence of actions. If the initial act is incongruent with the self-schema, self-regulatory failure will be inferred. Failure toward an active self-schema will result in increased goal striving and effort for discrepancy reduction. The impaired self-definition will be completed by performing subsequent schema-congruent acts and avoiding schema-incongruent acts. In study 2, I show that the vigor of this resultant self-completion process depends on the magnitude of the initial schema-incongruent behavior. A big failure enhances the polarization of the evaluations of opposite means. On the other hand, if the initial act is schema-congruent, the goal will be temporarily satisfied and released. It is important to note that the release of a goal is merely expected to terminate an ongoing self-regulation process but not to activate the competing goals automatically; therefore, instead of a perfect balancing sequence (i.e., choosing schema-incongruent means); I find indifference between schema-congruent and –

incongruent choices. A likely outcome of self-regulatory success that is not tested in the present research is balancing by valuing goal-irrelevant options since regulatory resources will be freed to pursue different goals. Lastly, I find that when a self-schema is not activated, individuals would infer commitment to a goal after performing an initial act. This inferred commitment marks the start of a self-regulation process and brings people to highlight the first act by subsequent goal-consistent choices. Importantly, I find strongest evidence for self-regulation after a self-regulatory failure, regardless of the content and the nature of the self-schema.

A major assumption of this framework is that the nature of a self-schema is goal-directed in a way to motivate people to complete a particular self-definition. First evidence for this goal-directedness is comes from the *temporal escalation criterion* (Chartrand et al. 2008) as explained in study 2 discussion. The activated self-schema increased commitment to a corresponding goal after an extended period of time providing evidence for the motivational process. A second method that can be used to tease apart goal pursuit from associational processes is the *goal-satiation criterion* (Chartrand et al. 2008). The strength of self-regulation should decrease when goals are fulfilled whereas other associations tend to grow stronger after an achievement. The pattern of effects observed in this research indicates that goal satiation occurred after self-regulatory success. Activating a self-schema appears to stimulate goal pursuit rather than making self-related associations salient.

To clarify the contribution of this research to the extant literature on the self-regulation of goals, it is important to distinguish between self-schema activation and superordinate goal priming. The effects of goal priming on subsequent goal pursuit, judgment, and choice has been widely studied in the literature (e.g., Shah and Kruglanski 2002, 2003; Fishbach and Dhar 2005; Fishbach et al. 2006). Although priming a superordinate goal might activate a related self-

schema, research shows that this result is contingent on the chronic accessibility of that self-schema (e.g., Bornstein et al. 2005). In other words, priming does not ensure that a self-schema will be activated regardless of the content and structure of the chronic self-concept. Perspective taking, in which the primed content is treated as though it is characteristic of the self (Wheeler et al. 2007) and self-presentation on a schematic dimension of the self have been found to activate the related self-schema (DeSteno and Salovey 1997; Spivak and Schlenker 1986 in Schlenker 1987). Thus, self-schema activation is believed to occur via either priming and self-referencing combined (i.e., active relating of the prime content to the self-concept) or direct self-presentation on a dimension of self-concept. Goal priming without self-referencing is not expected to generate similar effects as to that of self-schema activation unless that particular self-schema is chronically accessible in a person's mind. In fact, empirical evidence suggests that the opposite effects may be obtained on the aggregate where a superordinate goal prime leads to goal disengagement after an initial failure (Fishbach et al. 2006), probably due to unintended activation of competing goals simultaneously with the focal goal.

This research has significant practical implications for consumer welfare. Past research on resource depletion and licensing relies on the assumption that consumers have a clear sense of distinction between vices and virtues such that they strive to be "virtuous" over the long run by staying away from momentary "temptations". Typically, virtuous behaviors are expected to inhibit vice behaviors but vice behaviors cannot inhibit virtuous ones (Laran and Janiszewski 2009). My model and results do not agree with this general conviction. I show that both types of actions are driven by similar self-regulatory processes where a virtuous act is as likely to be perceived as a relapse or failure as an indulgent behavior. Rather than the content or the socially accepted connotations of a behavior, its role in an ongoing self-regulation process determines

subsequent behaviors. Consumer researchers who aim to enhance consumer welfare might gain a rather myopic view of reality if they focus solely on single, isolated choice or consumption episodes. Even if we successfully determine the necessary conditions that guarantee an initial prudent choice, the desired outcomes might be nullified by a subsequent indulgent act. Therefore, it is essential to extend our focus to consumption sequences while accounting for background goals that are capable of switching the meaning inferred from one's actions.

Alternate Theoretical Accounts

Although alternative explanations may be suggested, the results reported in this manuscript can best be accounted for by the proposed self-schema activation model. Below, I will identify major competing theoretical perspectives and discuss why they fail to explain the findings reported here.

First alternate account that comes to mind is the *self-affirmation theory* (Steele 1988). The notion of self-affirmation asserts that the self-system is predominantly motivated to protect its self-integrity, by sustaining adaptive and moral adequacy and maintaining an image of self as a competent, good, stable, and integrated person. In response to threats to this highly valued self-integrity, people seek to restore their global self-worth via affirming alternative sources of self-integrity (Sherman and Cohen 2006; Steele 1988). An important aspect of this self-system is that it aims to maintain global conceptions of self-adequacy through affirming central, valued aspects of the self instead of resisting to specific self-threats. According to the schema-activation model, a similar process is expected to occur only when a specific self-schema is not active or the regulatory failure does not relate to the active self-schema. Under an active self-schema; however, I expect that people would be motivated to restore that specific self-schema rather than affirming alternative sources of self-integrity, due to the dynamic and malleable view of self-

concept (Baumeister 1999; Markus and Kunda 1986). Moreover, the self-affirmation theory primarily deals with objective failures and ego-threats (e.g., illness, loss, negative feedback, risky behaviors, stereotypes, embarrassment, and so on) whereas the present framework intends to account for more ambiguous and subtle events and behaviors which can be subjectively judged as regulatory failures from one perspective but not from another. Self-affirmation theory would be silent as to why a person would evaluate the same piece of information as a regulatory failure or success across different situations, and why a regulatory failure in a certain domain would result in increased commitment to the goal and higher valuation of the means in the same domain.

A second explanation for the effects of self-schema activation may be provided by *construal level theory* (Trope and Liberman 2003; for a review, see Trope, Liberman, and Wakslak 2007). It can be argued that thinking about a particular self-schema leads to abstract construals which emphasize one's higher order goals whereas performing a behavior in the absence of a self-schema may result in a more concrete mindset. Goldsmith, Khan, and Dhar (as cited in Huber et al. 2008) have shown that under abstract construal, people follow an initial act of virtue with a subsequent virtuous choice whereas under concrete construal, an initial virtuous act satiates the superordinate goal decreasing the likelihood of subsequent virtuous choice. These predictions are not consistent with the data presented here. Rather than resulting in a shift of construal levels, self-schema activation functions as a trigger of self-regulation.

Limitations and Future Directions

The present research focused on hypothetical decisions and subsequent behavioral intentions. Future research should investigate whether the findings extend to actual choice sequences. Moreover, this framework needs to be tested across different self-concept domains.

For example, can we activate materialistic and simplistic self-schemata contextually, so as to influence the nature of subsequent shopping decisions? Another intriguing venue to explore would be to understand the strength and the duration of the effects of temporarily activated self-schemata. Importantly, whether or not self-schema activation gradually changes the content of the chronic self-concept is a question that needs to be addressed. Specifically, repeated activation of a particular self-schema may not only affect immediate decisions and behaviors but also mold one's self-concept in a more permanent way.

Another potential limitation of this research could be the activation of self-schema via a self-portrayal exercise. Due to the importance of the proposed model with regard to consumer welfare, it would be interesting to explore the role of marketing communication in activating self-schemata. Future research needs to investigate how and when factors such as retail settings, media choice and usage, advertising content and images, social marketing messages, products, and brands might activate a particular self-schema beyond merely priming certain concepts in memory. For example, eating an indulgent meal while reading Sports Illustrated versus Food & Wine magazine might have totally different effects on consumers' future dieting behaviors and health choices. Likewise, the present model might be able to provide a novel insight into sequential purchase decisions. Hypothetically, if the purchase, ownership, or usage of a particular brand activates a matching self-schema, any subsequent behavior that is not consistent with this brand-activated schema might stimulate future purchases in line with the personality of the initially chosen brand. In contrast, the performance of behaviors in line with the initially chosen brand might gradually cease to influence future choices due to the saturation of that particular self-schema.

My findings indicate that behavioral lapses might have positive consequences for

consumers' wellbeing if welfare-inducing self-schemata operate in the background. If, on the other hand, more harmful aspects of the self-concept such as indulgent or impulsive schemata are highlighted, a regulatory failure might lead to overindulgence. To minimize the destructive effects of failures in such cases, research is needed to explore potential boundary conditions. For instance, *self-complexity* (Linville 1985, 1987) might be suggested as a likely moderator of the self-schema activation model. Self-complexity is a function of "the number of aspects that one uses to cognitively organize knowledge about the self, and the degree of relatedness of these aspects" (Linville 1985, p. 97). Importantly, research has shown that high levels of self-complexity are associated with coping with negative feedback, stress or depression (Koch and Shepperd 2004; Rothermund and Meiniger 2004). High self-complexity is said to prevent affect associated with negative events or experiences involving one self-aspect from spreading to unrelated self-aspects since different aspects of the self will be rather independent from one another. The buffering effect of high self-complexity is expected only after a discrepancy between actual and ideal states of the self-concept is perceived. As such, the extent of schema-specific self-symbolizing after regulatory failure might be more emphasized for people low in self-complexity and toned down for those high in self-complexity. Further, self-complexity has also been suggested to be a rather malleable construct which can be manipulated as a state variable (e.g, Margolin and Neidenthal 2000; Monga and Lau-Gesk 2007), suggesting that undesired consequences of self-regulatory failures might be eliminated via situational intervention. This direction might provide a fruitful venue for future research on self-regulation and sequential choice.

Another related question open for future inquiry is whether low self-complexity might be temporarily induced to aid self-regulation and goal attainment. Especially when people fail

toward a personally important goal, the accessibility of alternative self-dimensions might serve as an escape route and inhibit goal progress despite the ongoing impact of the active self-schema. Therefore, it is essential for successful goal pursuit that not only the corresponding schema is invoked but also that it remains focal and does not get diluted by the accessibility of competing schemata. Research investigations in this direction might be highly influential in dealing with problematic consumer behaviors (e.g., compulsive buying, risky health decisions, and credit card debt).

Conclusion

Fishbach and Dhar (2007) have remarked that there are not many studies that explore the effect of an initial self-regulatory failure on subsequent goal pursuit. My research fulfills this gap by advancing a novel theoretical framework and testing model predictions across two experiments. The findings reported here not only bring fresh insight into the domains of self-regulation and sequential consumer choice but also raise a number of important research questions for future investigation.

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CHAPTER FIVE

DISSERTATION SUMMARY AND GENERAL CONCLUSIONS

Man is a goal seeking animal. His life only has meaning if he is reaching out and striving for his goals.—Aristotle [384-322 BC]

All human actions are equivalent... and all are on principle doomed to failure.—
Jean-Paul Sartre [1905-1980]

Philosophers have long observed that human beings are always in the pursuit of their goals and they inevitably fail in this never-ending quest. This basic observation about human nature has been a fundamental assumption underlying my research. Nevertheless, this dissertation approaches the relentless cycle of striving and failing in good spirits as it ultimately aims to establish that "to fail" does not imply "to be a failure". In two essays, I examine the aftermath of self-regulatory failure and show how and when an initial behavioral lapse may motivate future self-regulation.

In Essay One, I focus on the upstream consequences of objective failure feedback in the goal hierarchy using a cognitive dissonance based process. In three experiments, I show that failing at a subgoal leads to a state of cognitive dissonance, which motivates a subsequent dissonance-reduction process. On average, people eliminate this negative feeling by lowering their commitment to the endgoal, in turn, decreasing the likelihood of future self-regulation toward the focal endgoal. However, these demotivating consequences are shown to arise only when the endgoals are not well specified, when people pursue goals that are not congruent with their self-concept, and when the failure does not have any aversive consequences. In other words, an initial lapse does not beget subsequent failure as long as people set themselves specific and self-concordant endgoals or the original failure leads to undesirable outcomes. Essay One

primarily establishes the boundary conditions for the detrimental effects of self-regulatory failure on the pursuit of higher-order goals assuming that objective feedback on behavior is immediately available. What happens if we are not automatically notified of the self-regulatory status of our behaviors? How do we know whether we failed or achieved a goal by acting in a particular way?

Essay Two releases an assumption underlying Essay One and examines the possibility that a given behavior might denote a failure or an achievement depending on contextual factors. Self-schema activation model of self-regulation is advanced to provide novel insight into the dynamics of self-regulation. Two experiments provide support for model predictions, demonstrating that the inference made on an initial act depends on whether a related self-definition is active in the background and serves as a goal standard. In particular, I find that when a self-schema is active, a schema-incongruent behavior leads to an inference of failure and adds impetus to an ongoing self-regulation toward the completion of the active self-definition. This process of symbolic self-completion manifests in the form of valuing schema-serving means and devaluing schema-inhibiting means. A schema-congruent action, on the other hand, completes the active self-definition and liberates future self-regulation. This inferred goal progress or success depolarizes subsequent evaluations of schema-serving and –inhibiting means as the self-regulatory focus shifts away from the active self-schema. Behaviors serve a different function if a related self-schema is not active. Instead of implying self-regulatory failure or success, they initiate a process of self-regulation by activating a background goal and suggesting commitment. Consistent behavioral patterns emerge in the subsequent episode such that means that are consistent with the original behaviors are valued and those that are inconsistent are devalued. Most encouraging finding of this essay is that failure motivates future goal pursuit under an active self-schema. Moreover, the urge to complete a focal self-definition increases as

an initial failure grows in magnitude.

Taken together, the findings of these two essays draw a comprehensive and reassuring picture of self-regulatory failure. Perhaps human beings *are* doomed to fail but then again, it is likely that the opportunity to succeed is disguised as a failure.

CONCLUDING REMARKS

Importantly, this dissertation was driven by a concern for consumer welfare and therefore, I chose to focus on welfare-enhancing goals such as saving, pro-environmental consumption, and healthy eating without assuming globally accepted norms on these dimensions. Research is an individual journey and necessarily driven by our personal world views; yet, as scientists, we are in the business of seeking knowledge and understanding how things *are*, not prescribing norms and telling how things *should be*. Therefore, I have strived adopt a flexible and open-minded approach to the study of self-regulation and refrained from concluding how we can make consumers pursue the goals that we, as consumer researchers, think they should pursue. Regardless of the contexts I chose to study, this dissertation seeks to understand universal processes that drive human motivation and goal-directed behavior. The theoretical, rather than practical, focus of both essays reflects a deliberate resolution to arrive at conclusions that can be generalized across contexts, individuals, and cultures.

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APPENDIX ONE

ESSAY ONE MATERIALS

APPENDIX A

SAVINGS SCENARIOS USED IN STUDY 1

General Instructions

"WHAT WOULD YOU DO?"

On the next page, you will find a hypothetical scenario about the finances and savings decisions of an undergraduate student living on campus. We want you to read the scenario carefully and imagine yourself in the situation explained in the scenario.

Scenario 1: Subgoal Failure toward Abstract Endgoal

Imagine that you have a monthly income of $2,000 this semester. Your monthly non-discretionary expenses like rent, bills, groceries, transportation, books, and supplies add up to $1,200. This leaves $800 each month that you can spend on discretionary items. You just finished paying a loan and have some general savings. At the beginning of this month, you decided to start saving some money for the future.

You recently read a popular money management book and have decided to set a monthly personal savings goal for yourself. Of the $800 that remains after your monthly non-discretionary expenditures, you decide to save $150 this month. In other words, you would like to spend no more than $650 on discretionary expenses.

It is now the end of the month and you are looking over your discretionary monthly expenses on a personal accounting program. After summing up all the expenditures that you have made this month, you realize that you have spent $750 on discretionary expenses and saved only $50. That is, you have failed your savings goal for this month.

Scenario 2: Subgoal Success toward Abstract Endgoal

Imagine that you have a monthly income of $2,000 this semester. Your monthly non-discretionary expenses like rent, bills, groceries, transportation, books, and supplies add up to $1,200. This leaves $800 each month that you can spend on discretionary items. You just finished paying a loan and have some general savings. At the beginning of this month, you decided to start saving some money for the future.

You recently read a popular money management book and have decided to set a monthly personal savings goal for yourself. Of the $800 that remains after your monthly non-discretionary expenditures, you decide to save $150 this month. In other words, you would like to spend no more than $650 on discretionary expenses.

It is now the end of the month and you are looking over your discretionary monthly expenses on a personal accounting program. After summing up all the expenditures that you have made this month, you realize that you have spent $600 on discretionary expenses and saved $200. That is, you have achieved your savings goal for this month.

Scenario 3: Subgoal Failure toward Specific Endgoal

Imagine that you have a monthly income of $2,000 this semester. Your monthly non-discretionary expenses like rent, bills, groceries, transportation, books, and supplies add up to $1,200. This leaves $800 each month that you can spend on discretionary items. You just finished paying a loan and have some general savings. At the beginning of this month, you decided to start saving money for a trip to Mexico that you are planning to take with your friends next year at spring break before you graduate.

You recently read a popular money management book and have decided to set a monthly personal savings goal for yourself. Of the $800 that remains after your monthly non-

discretionary expenditures, you decide to save $150 each month in order to have sufficient funds to make the Mexico trip next year. In other words, you would like to spend no more than $650 on discretionary expenses.

It is now the end of the month and you are looking over your discretionary monthly expenses on a personal accounting program. After summing up all the expenditures that you have made this month, you realize that you have spent $750 on discretionary expenses and saved only $50. That is, you have failed your savings goal for this month.

Scenario 4: Subgoal Success toward Specific Endgoal

Imagine that you have a monthly income of $2,000 this semester. Your monthly non-discretionary expenses like rent, bills, groceries, transportation, books, and supplies add up to $1,200. This leaves $800 each month that you can spend on discretionary items. You just finished paying a loan and have some general savings. At the beginning of this month, you decided to start saving money for a trip to Mexico that you are planning to take with your friends next year at spring break before you graduate.

You recently read a popular money management book and have decided to set a monthly personal savings goal for yourself. Of the $800 that remains after your monthly non-discretionary expenditures, you decide to save $150 each month in order to have sufficient funds to make the Mexico trip next year. In other words, you would like to spend no more than $650 on discretionary expenses.

It is now the end of the month and you are looking over your discretionary monthly expenses on a personal accounting program. After summing up all the expenditures that you have made this month, you realize that you have spent $600 on discretionary expenses and saved $200. That is, you have achieved your savings goal for this month.

APPENDIX B

ENVIRONMENTAL IQ TEST MATERIALS USED IN STUDY 1

Environmental IQ Test Invitation Letter

Dear WSU Student:

The Washington State University Sustainability Initiative is working to increase campus-wide awareness of environmental problems and to improve environmentally friendly consumption practices among WSU students. As part of this process, the WSU Sustainability Initiative collaborates with the College of Business in surveying students to learn to what extent they are environmentally conscious.

As part of this process, WSU College of Business is requesting students to complete the "**Environmental IQ Test (EIQT)**." This test was developed by environmental researchers for the purpose of measuring individuals' environmental consciousness. Please take several minutes to complete the attached survey, which includes the EIQT.

Thank you for helping with the pro-environmental efforts of the WSU Sustainability Initiative and the College of Business to make WSU environmentally sound with a sustainable future.

College of Business
Washington State University
Pullman, WA
99164-4750 USA

Environmental IQ Test General Instructions

WHY SHOULD I CARE?

Environmental researchers have developed the "Environmental IQ Test" (EIQT ©) to measure your awareness of environmental issues. The EIQT was developed in collaboration with researchers from several environmental organizations across the nation and has been accepted as the official assessment tool to measure environmental awareness.

Research using this test has verified that scores on the EIQT accurately predict the nature and extent of environmentally responsible behaviors you perform. In other words, if you score high and do well on the EIQT, you are considered an environmentally conscious person and your likelihood of making a positive impact on the environment is predicted to be high. If you score low and do poorly on the EIQT, you are considered environmentally not conscious and not expected to be likely to make such a positive impact on the environment.

HOW ARE YOUR EIQT SCORE EVALUATED?

Scores between 75-100% are high-passing scores in the EIQT (15-20 correct answers out of 20).

Scores between 50-70% are passing scores in the EIQT (10-14 correct answers out of 20).

Scores between 0-45% are failing scores in the EIQT (0-9 correct answers out of 20).

HOW DO I LEARN MY EIQ?

To find out your environmental IQ, turn the page and answer the 20 questions of the EIQT. Please carefully read each question in the EIQT and the corresponding answer for each question. If you are unsure about the correct answer, please read all response options and provide your best estimate at the right response. Please mark your answer with a pencil on the blue scantron sheet. The allowed time for this test is 7 minutes. Try to keep a steady pace while thinking about your answers and do not skip any question. You will be notified when the allocated time is over. If you are ready, please turn the page and start your test..

Environmental IQ Test Questions and Correct Answers

1. Each person in the United States generates less than 2 pounds of garbage every day.
a) True
b) False

2. Which of the following cannot be composted?
a) Banana peel
b) Pizza box
c) Lawn clippings
d) Milk cartons

3. What temperature should your refrigerator be set to ensure safe and efficient operation?
a) 37 °F
b) 52 °F
c) 10 °F
d) -32 °F

4. Recycled glass is used in building roads.
a) True
b) False

5. Which of the following is a possible result of global warming?
a) Ice age
b) Runaway greenhouse effect
c) Return to temperate conditions
d) All of the above

6. Global warming is considered to be the steady increase in average temperature around the world over time. This means that all places on the Earth will become warmer in the short term.
a) True
b) False

7. Current hybrid cars use what kind of power?
a) Electric power
b) Internal combustion
c) Both a and b
d) Neither a nor b

8. Using paper from recycled materials conserves:
a) Water
b) Trees
c) Electricity
d) All of the above

9. In the next century, what is expected to happen to the sea level as a result of to global warming?
a) It will rise less than a foot
b) It will decrease
c) It will rise 2-4 feet
d) It will remain the same

10. Which part of a typical American home has the highest water usage?
a) Kitchen
b) Bathroom
c) Laundry Room
d) Yard

11. What portion of the energy consumed in USA is generated by fossil fuels?
a) 40%
b) 60%
c) 80%
d) 100%

12. The present rate of extinction is a natural process.
a) True
b) False

13. U.S. lawmakers are discussing a climate change bill that would include the regulation of _____
a) Carbon dioxide
b) Carbon monoxide
c) Sulfur
d) Nitrogen

14. Items that can be recycled include:
a) Cans/bottles
b) Junk mail
c) Stapled papers
d) All of the above

15. Gasoline powered SUVs, trucks, and buses lead to what health-related problems?
a) Acute respiratory problems
b) Impaired immune system
c) Birth defects and infant deaths
d) All of the above

16. On average, which of the following household processes accounts for the highest percentage in U.S. home energy consumption?

a) Water heating
b) Lighting
c) Heating and cooling
d) Home electronics

17. Who is the largest emitter of CO2?
a) Africa
b) China and India
c) European Community
d) United States

18. How many pounds of garbage does the average American produce each year?
a) 15 pounds
b) 150 pounds
c) 1,500 pounds
d) 15,000 pounds

19. Which of the following does not increase greenhouse gases?
a) The digestive process of cattle
b) Solar power
c) The breakdown of waste
d) Volcanoes

20. Which of the following produces carbon dioxide?
a) Personal computers
b) Motor vehicles
c) Deforestation
d) All of the above

Sample Success Feedback

Test Date: MM/DD/YY National Computer Systems Page:1

TEST SCORES

Test Name: EIQT
Student ID: 10000000
Student Name: LASTNAME

EIQT SCORE INTERPRETATION

RAW SCORE	% SCORE	PERFORMANCE
17-20	**85-100**	**Excellent**
13-16	65-80	Very Good
9-12	45-60	Good
5-8	25-40	Fair
0-4	0-20	Poor

YOUR EIQT SCORE

Raw Score: **18 out of 20**
% Score: **90 %**

You have been determined to be **Excellent** with regard to environmental consciousness.

Your EIQT score indicates that your level of environmental consciousness is **very high**. Based on this score, you are likely to perform a wide range of environmentally responsible behaviors and to do so regularly in your personal life. As a consumer, you have a significant propensity to make a positive impact on the environment.

Sample Failure Feedback

Test Date: MM/DD/YY National Computer Systems Page:1

TEST SCORES

Test Name: EIQT
Student ID: 10000000
Student Name: LASTNAME

EIQT SCORE INTERPRETATION

RAW SCORE	% SCORE	PERFORMANCE
17-20	85-100	Excellent
13-16	65-80	Very Good
9-12	45-60	Good
5-8	25-40	Fair
0-4	**0-20**	**Poor**

YOUR EIQT SCORE

Raw Score: **3 out of 20**
% Score: **15 %**

You have been determined to be **Poor** with regard to environmental consciousness.

Your EIQT score indicates that your level of environmental consciousness is **very low**. Based on this score, you are likely to perform a limited range of environmentally responsible behaviors and to do so rarely in your personal life. As a consumer, you only have a marginal propensity to make a positive impact on the environment.

APPENDIX C

SUBSEQUENT SUBGOAL SETTING MEASURE USED IN STUDY 2

WSU Sustainability Initiative Environmental Awareness Week

VERY IMPORTANT: PLEASE READ VERY CAREFULLY

WSU Sustainability Initiative (WSUSI) approached the College of Business and asked for their cooperation in organizing an Environmental Awareness (EA) Week on WSU campus next month. The purpose of this week is to increase the WSU community's awareness of environmental problems as well as to educate people in individual pro-environmental practices they could integrate into their daily lives. During this week, several campus tours and volunteering activities will be organized.

WSUSI is currently in the process of organizing the schedule of these activities in the EA week and they need your help with this. The events to be organized require different levels of participation, ranging from audienceship to active involvement. Assuming that you would be willing to participate in these events, please read the definitions of the following events carefully and think about at which level you would be willing to participate.

1. Recycling Tours: Campus tours will be conducted, where you will learn how the recyclables are collected from over 100 buildings at least once weekly, how the system was adapted to handle a huge influx of paper, and beverage containers, how text books and confidential documents are handled, and how you can contribute individually.

2. Volunteering activities: WSU Sustainability participates in numerous community events in which it helps to increase environmental awareness by direct involvement in various activities such as clean-ups, garbage collections, and educating children in local schools. Same volunteering activities will be conducted during the EA week.

Now we would like to ask you how much time you would like to allocate for each type of event. Please keep in mind that your input will help event organizers to provide sufficient resources for all participants and volunteers without causing unnecessary waste.

If you need to, please review the event descriptions above once more before you proceed with the questions.

How many hours would you be willing to allocate for Recycling Tours?

How many hours would you be willing to allocate for Volunteering Activities?

Scale: 0 – 10 hours (in 1 hour increments)

APPENDIX D

AVERSIVE CONSEQUENCES MANIPULATION USED IN STUDY 3

Letter used in Regular Failure Condition

Dear WSU Student:

Recently, The Daily Evergreen wrote about Sustainable Endowments Institute's report card on sustainability practices at WSU. As you will see below, WSU received a **"C"** for its green practices. Today, we are interested in assessing your environmental knowledge to determine if the grade is an accurate reflection of WSU's commitment to the environment.

The score has significant implications for WSU faculty, staff, and students. In particular, a negative sustainability score suggests that members of the WSU community may have insufficient knowledge about the environment. Thus, it is important for WSU to assess students' knowledge in this area to determine what types of programs are required to improve environmental protection and sustainability.


The Daily Evergreen

THE STUDENT VOICE OF WASHINGTON STATE UNIVERSITY SINCE 1895 www.dailyevergreen.com

Partly Cloudy

High: 34 | Low: 19

More weather Page 2

WSU scores a C grade for green practices

Officials say the report card from the Sustainable Endowments Institute is harsh

Sustainability report card

STANFORD	A-
CALIFORNIA	B
WASHINGTON	B-
UCLA	C+
WSU	C

WSU has requested the Sustainable Endowments Institute to help in assessing students' environmental knowledge. As part of this process, a large sample of WSU students is being asked to take the nationally recognized **Environmental IQ Test (EIQT)**. Awareness of environmental issues **does not directly influence a school's sustainability score**, but the Sustainable Endowments Institute recognizes the EIQT as a reliable test of environmental knowledge.

We assume that WSU students will perform well on the EIQT and score **above 75%**. High EIQT scores will **not** help raise our overall sustainability score, but will allow WSU to feel confident in its current environmental efforts directed towards WSU students. On the other hand, if WSU students perform poorly on the EIQT, additional programs related to environmental sustainability may need to be developed. **It is important that you pay adequate attention when answering questions on the test.** Please note that all students' EIQT scores will be reviewed and evaluated. We are confident that you will confirm WSU's commitment to the environment.

Thank you for your cooperation.

Letter used in Failure with Aversive Consequences Condition

Dear WSU Student:

Recently, The Daily Evergreen wrote about Sustainable Endowments Institute's report card on sustainability practices at WSU. As you will see below, WSU received a **"C"** for its green practices. Today, we are interested in assessing your environmental knowledge to determine if the grade is an accurate reflection of WSU's commitment to the environment.

The poor score has significant consequences for WSU faculty and staff, and most importantly WSU students. In particular, a negative sustainability score will reduce federal and state funding for our university and increase required payments from WSU to environmental protection funds. Both of these outcomes will reduce the operating budget of WSU and therefore require **increased student tuition and/or mandatory fees**. Thus, it is important for students to help improve the environmental practices here at WSU to avoid further increased costs of education.


The Daily Evergreen

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Partly Cloudy

High: 34 | Low: 19

More weather Page 2

WSU scores a C grade for green practices

Officials say the report card from the Sustainable Endowments Institute is harsh

Sustainability report card

STANFORD	A-
CALIFORNIA	B
WASHINGTON	B-
UCLA	C+
WSU	C

WSU has requested the Sustainable Endowments Institute to upgrade the sustainability score of WSU. As part of this process, a large sample of WSU students must take the nationally recognized **Environmental IQ Test (EIQT)**. Awareness of environmental issues **directly influences a school's sustainability score** and the Sustainable Endowments Institute recognizes this test as a reliable indicator of environmental knowledge.

We assume that WSU students will perform well on the EIQT and score **above 75%**. High EIQT scores will help raise our overall sustainability score and thus allow WSU to avoid the need to increase tuition and/or mandatory fees. Unfortunately, if WSU students perform poorly on the EIQT, the sustainability score could be lowered. If this is the case, tuition and mandatory fees may need to be increased further. **It is therefore important for you to do well on the test.** Please note that all students' EIQT scores will be reviewed and taken into account without exception. Therefore, your individual score has a significant bearing on the outcome of the situation facing WSU. We are confident that you will confirm our conviction that WSU deserves a higher grade regarding our commitment to the environment.

Thank you for your cooperation.

APPENDIX E

SUBSEQUENT SUBGOAL SETTING MEASURE USED IN STUDY 3

PERIOD 3 RESEARCH SESSIONS

Dear Student,

You will be participating in Period 3 research sessions in a few weeks. One of the studies you will be asked to take during those sessions will involve a verbal learning task. As Marketing Department researchers, we are particularly interested in studying consumer learning and memory. Therefore, we will give you a brief tutorial on a specific topic and later on test your performance on a related verbal task. We have two considerations while preparing this study. First, we would like to make this an educational and useful experience for you and accordingly, we have selected a number of topics that we consider very important in that regard. Second, we need to maximize the reliability of your performance on the verbal task and therefore, we would like to choose a topic that is appealing and involving to you.

Please review the topics listed on the next page. Then you will be asked to indicate your personal liking for each of them. In the next Research Period, you will be assigned to a topic that is of interest to you. Note that you can assign the same rating to two or more topics if you are indifferent between them.

Below is the list of available topics for the verbal learning task. Once you have read the description of the topics carefully, you can proceed to the next page to indicate your liking of each.

Topic 1: Recycling

You will be given a tutorial and a test on recycling practices that you can personally perform.

Topic 2: Healthy eating

You will be given a tutorial and a test on how to follow a diet to maximize your personal health.

Topic 3: Energy conservation

You will be given a tutorial and a test on what kind of behaviors you can perform in order to save energy.

Topic 4: Helping others

You will be given a tutorial and a test on what kind of actions you can take to serve the less fortunate.

Please indicate **how appealing** you find the following topic for the verbal learning task and the subsequent performance test.

RECYCLING

Not appealing 1 2 3 4 5 6 7 8 9 Very appealing

HEALTHY EATING

Not appealing 1 2 3 4 5 6 7 8 9 Very appealing

ENERGY CONSERVATION

Not appealing 1 2 3 4 5 6 7 8 9 Very appealing

HELPING OTHERS

Not appealing 1 2 3 4 5 6 7 8 9 Very appealing

APPENDIX TWO

ESSAY TWO MATERIALS

APPENDIX A

LIST OF VALUES USED IN PRETEST 1

1. **Health consciousness:** Reflecting about and examining your health; being alert to health-related changes; watching diet and exercising for health-related reasons.

2. **Fun and enjoyment in life:** Trying to have fun in life; engaging in recreational activities; living an enjoyable, leisurely life; thriving on parties; desire to have thrilling experiences.

3. **Value consciousness**: A concern for low prices; desire to get the best deal for one's money; tendency to shop for low prices.

4. **Warm social relationships**: Valuing true friendship; being there for one's friends; finding meaning in social relations.

5. **Sense of accomplishment**: Being accomplished at school/work; setting and striving to reach for one's goals; a need to get things done and be successful.

6. **Simplicity**: Saving resources (financial and other); living a simple life without many possessions; not wasting money; buying simple, functional products; minimizing consumption.

7. **Sensory pleasures:** Pursuit of sensory stimulation via consumption, such as indulging in tasty food and purchasing fashion-clothing items.

8. **Physical attractiveness:** A concern for your physical appearance; making an effort to look your best; watching your diet and exercising to look fit.

9. **Materialism**: Enjoying material growth; valuing ownership and consumption of material goods; buying best products; loving and enjoying comfort; a desire to be rich.

10. **Environmental responsibility**: A concern for environmental problems; effort to minimize one's environmental footprint; conserving energy, recycling, minimizing resource waste, etc.

11. **Sense of belonging**: Being part of others' lives; a need to feel at "home" with family and/or friends; being an accepted member of a social group.

12. **Charitableness:** Working for the welfare of others; helping people in need; being generous to others.

13. **Being well respected**: Having high status among your peers; caring about others' opinions of you; need for social recognition; desire to impress others.

APPENDIX B

LIST OF FOOD ITEMS USED IN PRETEST 2

1. Cereal Bar	**26.** Pizza
2. Apple	**27.** Jalapeno poppers
3. Cookies	**28.** Peach
4. French fries	**29.** Chicken nuggets
5. Orange	**30.** Chocolate bars
6. Cola	**31.** Rice cracker
7. Carrots	**32.** Oatmeal
8. Whole wheat bread	**33.** Doughnuts
9. Low-fat yoghurt	**34.** Apple pie
10. Cereal	**35.** Chocolate truffles
11. Milk	**36.** Nachos
12. Peanuts	**37.** Broccoli
13. Salad	**38.** Ham
14. Potato chips	**39.** Orange juice
15. Popcorn	**40.** Crackers
16. Banana	**41.** String cheese
17. Brownie	**42.** Bagel
18. Green tea	**43.** Jello
19. Pear	**44.** Pickles
20. Hot dog	**45.** Celery
21. Energy bar	**46.** Pretzels
22. Ice cream	**47.** Waffle
23. Jerky	**48.** Canned tuna
24. Instant noodles	**49.** Granola
25. Hamburger	**50.** Bacon

APPENDIX C

SELF-REGULATORY FAILURE VIGNETTES USED IN PRETEST 3

Vignette 1: Healthy Breakfast Choice

IMAGINE…

It's a regular school day in the summer school. You wake up early in the morning and decide to have breakfast before the first class of the day. You quickly fix yourself a bowl of granola with low-fat milk.

Vignette 2: Unhealthy Breakfast Choice

IMAGINE…

It's a regular school day in the summer school. You wake up early in the morning and decide to have breakfast before the first class of the day. You quickly grab a doughnut and a cup of coffee on your way to class.

Vignette 3: Healthy Lunch Choice

IMAGINE…

It's a regular school day in the summer school. You go out of class at noon and feel very hungry. You need to have lunch before the next class starts. You decide to go to Hillside Café and have salad and bottled water for lunch.

Vignette 4: Unhealthy Lunch Choice

IMAGINE…

It's a regular school day in the summer school. You go out of class at noon and you feel very hungry. You need to have lunch before the next class starts. You decide go to Hillside Café and have cheeseburger and fries for lunch.

Vignette 5: Healthy Dinner Choice

IMAGINE…

On a Friday afternoon, you have a couple of friends over at your place. After a couple hours of chatting and relaxing, you all feel hungry and decide to have dinner at a local restaurant. You scan the menu and order grilled chicken with vegetables for yourself.

Vignette 6: Unhealthy Dinner Choice

IMAGINE…

On a Friday afternoon, you have a couple of friends over at your place. After a couple hours of chatting and relaxing, you all feel hungry and decide to have dinner at a local restaurant. You scan the menu and order pizza and hot wings for yourself.

APPENDIX D

SELF-PORTRAYAL TASK USED IN THE PILOT STUDY

General Instructions

SELF-PORTRAYAL STUDY

This study involves the detection of personal values in others' self-descriptions. We ask you to serve as a stimulus person for judgments made by other students by portraying yourself as possessing a given value for the purposes of the study, regardless of whether you actually esteem that value in your life. Graduate students in training for degrees in consumer psychology would view your self-portrayals to test whether they could detect which participants really possessed the value they claimed to possess.

The opportunity for self-portrayal would consist of providing answers to a number of questions. You are required to answer the questions in a way to portray yourself as cherishing the given personal value. Please draw on examples of your own past behavior in answering the questions for the self-portrayal. Rather than lying or making up responses to the questions, you should focus your responses to the questions on selected examples from your past behavior that supports the portrayal you are trying to make (even if those few examples are not representative of your true nature).

You may choose not to participate if you feel you are completely unable to portray yourself in the prescribed manner.

Now please turn the page to read more about the value to be used for self-portrayal.

Healthy Self-Schema Condition

The personal value to be used for the self-portrayal task is:

"HEALTH CONSCIOUSNESS"

DIRECTIONS: We ask you to portray yourself as a "health-conscious" person in your answers to the following questions. Please present yourself as the type of person who regularly reflects about and examines his/her health, is alert to health-related changes, closely monitors food intake and exercises to improve his/her overall health, and makes healthy consumption decisions. People, who are ignorant about the health-related consequences of their actions and make consumption decisions that are unhealthy, cannot enjoy the contentment of having a healthy body and mind in life. So, please present yourself as someone who deeply enjoys the benefits of physical and mental health, and finds satisfaction in a healthy lifestyle.

Please remember to draw on examples of your own past behavior in answering the questions in order to support the portrayal you are trying to make.

Now please turn the page and take your time on each question to make sure that your responses reflect the desired value. Take as much space as you need for your self-describing responses.

Hedonic Self-Schema Condition

The personal value to be used for the self-portrayal task is:

"HEDONISM / PLEASURE SEEKING"

DIRECTIONS: We ask you to portray yourself as a "hedonistic" person in your answers to the following questions. Please present yourself as the type of person who regularly seeks pleasure and enjoyment in life; strives to gratify his/her desires; enjoys good food, sex, shopping; and makes hedonic consumption decisions. People, who deny themselves delight, joy, and gratification in life and make consumption decisions that are self-restraining, cannot enjoy the contentment of having pleasure and sensual satisfaction in life. So, please present yourself as someone who deeply enjoys pleasurable and gratifying experiences, and finds satisfaction in a hedonic lifestyle.

Please remember to draw on examples of your own past behavior in answering the questions in order to support the portrayal you are trying to make.

Now please turn the page and take your time on each question to make sure that your responses reflect the desired value. Take as much space as you need for your self-describing responses.

Control/Charitable Self-Schema Condition

The personal value to be used for the self-portrayal task is:

"CHARITABLENESS"

DIRECTIONS: We ask you to portray yourself as a "charitable" person in your answers to the following questions. Please present yourself as the type of person who regularly works for the welfare of others, helps people in need, is generous and benevolent to others, and makes altruistic consumption decisions. People, who are ignorant about the consequences of their actions on the welfare of others and make consumption decisions that are egocentric, cannot enjoy the rewards of doing charitable and philanthropic deeds in life. So, please present yourself as someone who deeply enjoys generous and benevolent actions, and finds satisfaction in a charitable lifestyle.

Please remember to draw on examples of your own past behavior in answering the questions in order to support the portrayal you are trying to make.

Now please turn the page and take your time on each question to make sure that your responses reflect the desired value. Take as much space as you need for your self-describing responses.

Self-Portrayal Questions

1. How would you describe your interpersonal relationships (with friends, family, etc.)?

2. How would you characterize your consumption habits (e.g., shopping, eating, choice of goods and services)?

3. How would you describe your extracurricular activities?

4. What is the most important thing you learned in life?

5. How would you describe yourself and your life five years from now?

APPENDIX E

OPEN-ENDED SELF-PORTRAYAL AND SELF-DESCRIPTION TASKS USED IN STUDY 1

General Instructions of the Self-Portrayal Task for Healthy and Hedonic Self-Schema Conditions

SELF-PORTRAYAL STUDY

This study involves the detection of personal values in others' self-descriptions.

We ask you to serve as a stimulus person for judgments made by other students by portraying yourself as possessing a given value for the purposes of the study, regardless of whether you actually esteem that value in your life. Graduate students in training for degrees in consumer psychology would view your self-portrayals to test whether they could detect which participants really possessed the value they claimed to possess.

The opportunity for self-portrayal will consist of writing a few self-descriptive paragraphs. A number of specific domains will be provided to facilitate the task for you and you may focus on those domains while presenting yourself as a person who cherishes the given personal value. Please draw on examples of your own past behavior when completing your self-portrayal. Rather than lying or making up responses to the questions, you should focus on selected examples from your past behavior that supports the portrayal you are trying to make (even if those few examples are not representative of your true nature).

You may choose not to participate if you feel you are completely unable to portray yourself in the prescribed manner.

Now please click Continue to read more about the value to be used for self-portrayal.

General Instructions of the Self-Description Task for Control Condition

SELF-DESCRIPTION STUDY

This study involves describing what your typical day of the week is like.

We ask you to serve as a stimulus person for judgments made by other students by describing how a typical day of the week is like for you. Graduate students in training for degrees in consumer psychology would view your descriptions to understand and analyze the lives of college students.

The task will consist of writing a few self-descriptive paragraphs. Please try to imagine how a typical day of the week starts, evolves, and ends for you. Rather than giving quick and general responses, try to provide as much detail as you can.

You may choose not to participate if you do not want to share the details of your life with us.

Now please click Continue and take about 5 minutes to write a few paragraphs about a typical day in your life.

APPENDIX F

SELF-REGULATORY FAILURE VIGNETTES USED IN STUDY 1

Vignette 1: Healthy Lunch Choice

IMAGINE…

It's a regular school day in the fall semester. You get out of class at noon and you feel very hungry. You need to have lunch before the next class starts. You go to Hillside Café and check out the meal options in the cafeteria. After trying to decide between salad and pizza; you settle on having hot pizza and cola for lunch.

Vignette 2: Unhealthy Lunch Choice

IMAGINE…

It's a regular school day in the fall semester. You get out of class at noon and you feel very hungry. You need to have lunch before the next class starts. You go to Hillside Café and check out the meal options in the cafeteria. After trying to decide between pizza and salad; you settle on having green salad and bottled water for lunch.

APPENDIX G

SELF-REGULATORY FAILURE VIGNETTES USED IN STUDY 2

Vignette 1: Small and Healthy Lunch Choice

IMAGINE…

It's a regular school day in the spring semester. You get out of class at noon and feel very hungry. You decide to go off campus with your friends to have a nice lunch. You go to a local pizza place and check out the menu. After trying to decide between pizza and salad; you settle on having a small green salad with nonfat dressing and bottled water for lunch.

Vignette 2: Large and Healthy Lunch Choice

IMAGINE…

It's a regular school day in the spring semester. You get out of class at noon and feel very hungry. You decide to go off campus with your friends to have a nice lunch. You go to a local pizza place and check out the menu. After trying to decide between pizza and salad; you settle on having a large green salad with low fat dressing, light yogurt, and juice for lunch.

Vignette 3: Small and Unhealthy Lunch Choice

IMAGINE…

It's a regular school day in the spring semester. You get out of class at noon and feel very hungry. You decide to go off campus with your friends to have a nice lunch. You go to a local pizza place and check out the menu. After trying to decide between salad and pizza; you settle on having two slices of pizza and a small cup of cola for lunch.

Vignette 4: Large and Unhealthy Lunch Choice

IMAGINE…

It's a regular school day in the spring semester. You get out of class at noon and feel very hungry. You decide to go off campus with your friends to have a nice lunch. You go to a local pizza place and check out the menu. After trying to decide between salad and pizza; you settle on having four slices of pizza with meat topping, buffalo wings, and a large cup of cola for lunch.